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EPA United States Environmental Protection Agency

Region 6 Compliance Assurance and Enforcement Division

INSPECTION REPORT

Inspection Date(s):	7/22-7/24/2014		
Media:	Air		
Regulatory Program(s)	RMP		
Company Name:	**Formosa Plastics Corp., LA**		
Facility Name:	**Formosa Plastics Corp., USA**		
Facility Physical Location:	Gulf States Rd		
(city, state, zip code)	Baton Rouge, LA 70805		
Mailing address:	P.O. Box 271		
(city, state, zip code)	Baton Rouge, LA 70821		
County/Parish:	East Baton Rouge Parish		
Facility Contact:	Omer Wolff	Environmental Manager	
	Owolff@flbr.fpc.com		
FRS Number:	110000597444		
Identification/Permit Number:	RMP 1000 0013 2812		
Media Number:	2203300002		
NAICS:	325211		
SIC:			
Facility Representatives:	Omer Wolff	Environmental Manager	225-358-8511
	Harold Demmer	Environmental-Safety	225-356-8734
	Kelly Serio	Plant Manager	
EPA Inspectors:	Dominique Duplechain	6EN-AS	214-665-7484
	Samuel Tates	6EN-AS	214-665-2243
State Inspector(s):	None		

Metadata		
	Title:	Formosa Plastics Baton Rouge Plant Baton Rouge East Baton Rouge Parish LA
	Author:	US EPA Region 6 Compliance Assurance and Enforcement Division Dallas TX
	Subject:	Inspection Report Clean Air Act
	Keywords:	Risk Management Plan

EPA Lead Inspector Signature/Date	Dominique Duplechain	9.2.2014 Date
Supervisor Signature/Date	Samuel Tates	9-2-2014 Date

Section I - INTRODUCTION

PURPOSE OF THE INSPECTION

On July 22, 2014, Samuel Tates and I arrived at Formosa Plastics Corp., Louisiana for an announced Clean Air Act inspection. An email was sent to Mr. Kelly Serio on July 17, 2014, which informed him of my arrival. I met with Mr. Omer Wolff, Environmental Manager, Mr. Harold Demmer, Environmental-Safety Advisor, and Mr. Kelly Serio, Plant Manager. I presented my credentials to Mr. Serio and informed him that this was an EPA inspection to determine compliance with 40 CFR Subpart 68 – Chemical Accident Prevention Provisions. Mr. Serio indicated that he was not aware of my arrival and later discovered that he deleted the announcement email. An employee representative was invited to participate in the inspection. The facility does not have union representation.

FACILITY DESCRIPTION

Formosa Plastics, LA is a producer of basic industrial chemicals and materials. Chlorine, ethylene dichloride, anhydrous hydrogen chloride, and vinyl chloride are the major materials used and/or produced at the facility. The primary commodity produced at the facility is polyvinyl chloride resin. Polyvinyl chloride is used to manufacture food wrap, children's toys, medical devices, garden hoses, piping, vinyl siding, floor tiles, roofing shingles, electrical wiring insulation, furniture, clothing articles, automotive parts, etc. The facility is certified to ISO international quality and environmental management standards and employs approximately 219 employees and approximately 89 full-time contractors. The Baton Rouge plant consists of three operating units; two of which are covered under the Risk Management regulation. These are Polyvinyl Chloride (PVC) and Vinyl Chloride Monomer (VCM).

Section II – OBSERVATIONS

40 CFR Part 68- Chemical Accident Prevention Provisions
Subpart A-General
§68.12 General Requirements
Formosa submitted a single Risk Management Plan (RMP) with covered processes that are subject to Program 3 requirements. The last 5 year update was August 31, 2012. The regulated flammable substances that are above the threshold quantities identified in §68.130 are: vinyl chloride and propylene. The regulated toxic substances that are above the threshold quantities identified in §68.130 are: chloroform, anhydrous hydrogen chloride, and chlorine. As a facility with Program 3 processes, Formosa must develop and implement a management system, conduct a hazard assessment, implement the prevention requirements of §68.65 through §68.87, develop and implement an emergency response program, and submit the data elements from 68.175 in their RMP.

§68.15 Management
I reviewed Formosa's PSM/RMP organizational chart which appeared to assign departments to specific sections of the RMP and not by individuals by name or title to specific sections of the risk management program as required by §68.15(c). The chart recognizes Mr. Kelly Serio as the person with overall responsibility for implementing the requirements of the Risk Management Program.

Subpart B- Hazard Assessment
§68.20 Applicability

Formosa Plastics is a Program 3 stationary source subject to this part and is required to prepare a worst case release scenario analysis and complete the five year accident history.

§68.22 Offsite consequence analysis parameters
I reviewed the facility's RMP Comp scenario summary. In the analyses of the worst case and alternate scenarios Formosa utilized the parameters identified in the rule.

§68.25 Worst-case release scenario analysis.
For its flammable worst case scenario, Formosa used the release of the entire volume of their largest flammable containing vessel with no controls in calculation of their worst case scenario. For the toxics worst case scenario, Formosa used catastrophic rupture of the vessel with the largest quantity of a toxic chemical with the largest impact.

§68.28 Alternative release scenario analysis.
Formosa identified and analyzed at least one alternative release scenario for all regulated flammable substance held in a covered process that is more likely to occur than the worst case scenario. Formosa used the parameters defined in §68.22 to determine distance to the end point. No mitigation systems were considered. Formosa identified a toxic alternate scenario for each toxic identified in the RMP submittal.

§68.30 Defining offsite impacts—population.
Formosa did not provide documentation that indicated that population was estimated within a circle with its center at the point of the release and a radius determined by the distance to endpoint. The population was estimated using Landview 6 Census 2000 population estimator. Landview 6 software uses 2000 Census data. It appears Formosa did not use to most recent Census data to estimate the population potentially affected as required by §68.30(c). The population identified in the toxic worst case scenario was not estimated to two significant figures as required by §68.30(d).

§68.33 Defining offsite impacts—environment.
For the toxic worst case scenario, Formosa identified environmental receptors that could potentially be affected from the release. Formosa did not provide any maps or data that were used to identify environmental receptors within the distance to endpoint.

68.36 Review and update.
Formosa conducted its review and update of the off-site consequences analysis in August 2012.

68.39 Documentation.
Formosa did not provide any maps depicting the point of the release and a radius of distance to endpoint. Landview 6 output data was not provided. It appears that Formosa did not maintain documentation used to estimate population and environmental receptors as required by §68.39(e).

§68.42 Five year accident history
In the RMP submittal, Formosa indicated there were no accidental releases of a RMP covered substance held above a threshold quantity in a covered process that resulted in death, injury, or significant property damage onsite, or known offsite death, injury, evacuation, shelter in place, property damage, or environmental damage.

Subpart D-Program 3 Prevention Program

§68.65 Process Safety information
I reviewed the following process safety information: information pertaining to the hazards of substances in the processes, the equipment in the process, P&IDs, process descriptions of the RMP processes, electrical classification, block flow diagrams, and upper and lower limits. Although requested, Formosa could not provide the maximum intended inventory as required by §68.65(c)(1)(iii).

§68.67 Process Hazard Analysis
Electronic PHA's are readily available to all employees through Formosa's intranet. I reviewed the following PHAs: 2012 VCM and 2012 PVC. The PHA summary pages were exactly the same and still in draft form. The summary did not indicate the dates the studies were conducted or identify the methodology used (ie HAZOP, What-if, etc). The PHAs were performed by at least one individual knowledgeable in the process. Based on the worksheets, it appeared that the PHA team used HAZOP methodology to perform the assessment. PHAs addressed process hazards, previous incidents at sites other than the stationary source, facility siting and human factors. In the RMP submittal, hurricane is identified as a hazard that is addressed in the PHAs. The PHAs made references to rain or freezing hazards; however, hurricane was not identified. The PHAs referenced a global node to identify external factors which may have included hurricanes. I did not see the global node in the PHAs at the time of the inspection. It appears that Formosa did not identify a hurricane as a hazard in the 2012 PHAs as required by §68.67(c)(1). It appears that Formosa did not address incidents that occurred at the stationary source that had a likely potential for catastrophic consequences as required by §68.67(c)(2).

I reviewed the 2008 facility siting study conducted by Baker Risk which was referenced in the PHA summary. From the study, Formosa has a few high risk items remaining. The facility siting tracking sheet did not set a target date for outstanding action items as required by §68.67(e).

PHAs included recommended actions from the HAZOP study. Formosa maintains documentation that tracks the recommendations from each PHA; however, closed recommendations did not identify the action taken as required by §68.67(e). The PHA tracking sheet identified action items that were past the due date with no indication of an extension or updated target date as required by §68.67(e).

§68.69 Operating Procedures
I reviewed operating procedures from the PVC and VCM Units. Formosa had procedures in place for the operating phases identified within the rule. Normal and Temporary Operations could not be readily identified. It appears that Formosa did not list or reference safety and health considerations within each procedure as required by §68.69(a)(3). It appears that Formosa did not list or reference operating limits: consequences of deviation or steps required to correct or avoid deviation as required by §68.69(a)(2) within each operating procedure. Safe Upper and Lower limits were identified in the facility's Standard Operating Manual (SOM). Consequences of deviation and corrective action were addressed in Unit and Area Specific troubleshooting manuals. Safety and Health was addressed in the Unit Specific Safety and Health Manual.

Formosa has a procedure in place for the annual review of operating procedures. Formosa provided 2014 annual certifications for the following: PVC 100 Area SOP Manual (April 29, 2014); PVC 200 Area SOP Manual (April 29, 2014); PVC Area 300 Manual (May 13, 2014). See Follow Up.

I reviewed the following safe work practices: Flame Permitting Procedure, Hazardous Energy Control, Confined Space Permitting and Entry.

§68.71 Training
I met with Formosa's Document Control Officer. I reviewed training documentation for selected operators from the PVC and VCM units. Operator qualification included training that covered operating phases and were specific to the operator's unit. Training records identified safety and health training, as well as, safe work practices. The training records included unit specific training, safe work training, and safety and health. Operator training unit qualification training dates are included in Table 1. See Follow Up.

Table 1: Operator Unit Training

Operator	Course Title	Previous Date	Most Recent Date
Operator 1	PVC Loader Recert	1/27/2010	2/5/2013
Operator 1	Vinyl Loading Recert	4/14/2010	4/30/2013
Operator 2	PVC Loader Recert	12/6/2010	12/6/2013
Operator 2	Vinyl Loading Recert		9/25/2012
Operator 3	PVC Recovery Recert	5/27/2011	5/22/2014
Operator 3	PVC Dryer Recert	4/30/2010	4/23/2013
Operator 4	SOP Annual Recert		3/9/2013
Operator 5	V2 Recert	NA	2/19/2013
Operator 5	SOP Recert	NA	3/9/2013
Operator 6	V2 100/200 Recert	4/28/2009	3/13/2012
Operator 6	V2 300/400 Recert	12/31/2010	1/7/2014

§68.73 Mechanical Integrity
I reviewed inspection/test reports and procedures for pressure relief valves, tanks, pressure vessels, and pumps. The inspection/test reports were appropriately documented. Formosa provided a list of inspections that were extended beyond the initial due date. The inspections were extended according to Formosa's guidelines.

Vibration data from 2014 was reviewed for critical and non-critical pumps.

I reviewed training records for maintenance, instrumentation, and electrical employees. Training records included safety and health, as well as, procedures applicable to the employee's job task.

§68.75 Management of Change (MOC)
Formosa developed a MOC procedure. See Follow Up.

§68.77 Pre-startup review (PSSR)
I did a cursory review of the following PSSRs: 200 Area Furnace and 300 Area Expansion. See Follow Up. PSSR checklists were not filled out to completion and action items were not documented as closed prior to start-up as required by §68.77(b).

§68.79 Compliance audits
I reviewed the October 2011 PSM/RMP compliance audit report. On December 27, 2011, Formosa certified that it has evaluated compliance with the Program 3 requirements. The previous audit was not reviewed at the time of the inspection. See Follow Up.

The 2011 audit identified deficiencies that were observed during this inspection. An example of this is the maximum intended inventory. It appears that Formosa did not correct the deficiencies discovered in the 2011 compliance audit as required by §68.79(d).

§68.81 Incident Investigation
At the time of the inspection, incident reports were not reviewed. See Follow Up.

§68.83 Employee Participation
I reviewed the employee participation policy. Formosa's employee participation plan addressed employee participation for each Program 3 element. Employees participate in the development of PHAs and safety meetings.

§68.85 Hot work permit
I reviewed hot work permits from 2014. The permits identified the object on which hot work is performed and the date authorized for hot work. Formosa keeps hot work permits on file until completion of hot work activities. Hot work permits required the fire watch to be identified by name. Formosa did not consistently identify the fire watch by name on the reviewed permits as required by §68.69(d).

§68.87 Contractors
I reviewed Formosa's procedures for training and other requirements needed for facility access. Formosa provided the work contracts for Turner Industries and Vector Electric. The contracts did not provide information on the contractor's safety performance and programs. See Follow Up. Training records were provided for two Turner employees which included the following training: safety and health, job specific, safe work.

Subpart E-Emergency Response
§68.90 Applicability
Formosa employs individuals who respond to accidental releases. I met with Mr. Rusty Daigle, Safety Manager, to discuss the Emergency Response Program. I reviewed the Emergency Response Plan (ERP). The ERP which incorporates the Crisis Management Plan references medical treatment but does not identify what first aid is necessary for accidental human exposure as required by §68.95(a)(1)(ii). I reviewed quarterly sprinkler system inspections, annual preventative maintenance and pump inspections for fire trucks, monthly and annual fire hose inspection.

Formosa's Safety Procedure 9: Fire Fighting Equipment included the procedures on the maintenance and inspection of emergency response equipment.

The facility performs annual drills to test the effectiveness of the ERP. The ERP identified when changes were made in the past with sign off sheets. The facility did not provide a procedure to review and update the ERP and ensure that employees are informed of the changes as required by §68.95(a)(4).

Section III – AREAS OF CONCERN

1. 40 CFR 68.15: Formosa's PSM/RMP organizational chart appeared to assign departments to specific sections of the RMP and not individuals by name or title to specific sections of the risk management program.

2. 40 CFR 68.30(c): Formosa did not use to most recent Census data to estimate the population potentially affected in the offsite consequence analyses.

3. 40 CFR 68.30(d): The population identified in the worst case scenario was not estimated to two significant figures.

4. 40 CFR 68.39(e): Formosa did not maintain documentation used to estimate population and environmental receptors for the offsite consequence analyses.

5. 40 CFR 68.65(c)(1)(iii): Formosa did not provide the maximum intended inventory.

6. 40 CFR 68.67(c)(1): Formosa did not identify hurricane as a hazard in the 2012 PHAs.

7. 40 CFR 68.67(c)(2): In the 2012 PHAs, Formosa did not address incidents that occurred at the stationary source that had a likely potential for catastrophic consequences.

8. 40 CFR 68.67(e): The facility siting tracking sheet did not set a target date for outstanding action items.

9. 40 CFR 68.67(e): Formosa maintains documentation that tracks the recommendations from each PHA; however, closed recommendations did not identify the action taken that led to closure.

10. 40 CFR 68.67(e): The PHA tracking sheets identified action items that were past the due date with no indication of an extension or updated target date.

11. 40 CFR 68.69(a)(2): Formosa did not list or reference operating limits: consequences of deviation or steps required to correct or avoid deviation within each operating procedure.

12. 40 CFR 68.69(a)(3): Formosa did not list or reference safety and health considerations within each operating procedure.

13. 40 CFR 68.69(d) and 68.85(b): Hot work permits required the fire watch to be identified by name. Formosa did not consistently identify the fire watch on the reviewed permits.

14. 40 CFR 68.77(b): 200 Area Furnace and 300 Area Expansion PSSR checklists were not filled out to completion and action items were not documented as closed prior to start-up.

15. 40 CFR 68.79(d): Formosa did not correct the deficiencies discovered in the 2011 compliance audit.

16. 40 CFR 68.95(a)(1)(ii): The ERP which incorporates the Crisis Management Plan references medical treatment but does not identify what first aid is necessary for accidental human exposure.

17. 40 CFR 68.95(a)(4): Formosa did not provide a procedure to review and update the ERP and ensure that employees are informed of the changes.

Section IV – FOLLOW UP

Formosa requested an extension until August 22, 2014, to provide documents requested as part of the inspection for offsite review. The information that Formosa will provide will be evaluated during the enforcement process.

Section V – LIST OF APPENDICES

Appendix 1 – Sign-in sheet

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
1445 ROSS AVENUE, SUITE 1200
DALLAS TX 75202-2733

January 22, 2014

Ms. Lisa Perry
RMP Coordinator
DOW Chemical Petroleum Company
P.O. Box 150
Plaquemine, LA 70765

Re: EPA Risk Management Program Inspection of DOW Chemical Petroleum Company from April 29 – May 02, 2013

Dear Ms. Perry,

As you are aware, an inspector from the U.S. Environmental Protection Agency (EPA) conducted an unannounced Clean Air Act Risk Management Plan compliance inspection at the DOW Chemical Petroleum Company (DOW), at 21255 Hwy 1 in Plaquemine, Louisiana from April 29 to May 02, 2013.

Based on the information contained in the inspection report and the additional information provided by DOW subsequent to the inspection, there are no violations or areas of concern identified at your facility for which EPA intends to take enforcement action, at this time, pursuant to Section 112(r) of the Clean Air Act and the Chemical Accident Prevention of 40 CFR Part 68.

This letter does not relieve DOW from its responsibility to comply with all requirements of the Clean Air Act and the requirements of any permits issued thereunder, as described in Section 502 of the Clean Air Act, nor does it constitute a waiver by EPA of its right to enforce compliance with the requirements of any permits, regulations, or other requirements of the Clean Air Act by actions pursuant to Section 113 of the Act.

If you have any questions regarding this matter, please contact me at (214) 665-2243, or Minerva DeLeon, a member of my staff, at (281) 983-2149.

Sincerely yours,

Samuel Tates
Chief, Air Surveillance Section
Compliance Assurance and Enforcement Division

cc: Keith Jordan, Senior Environmental Scientist, Inspection Division
Louisiana Department of Environmental Quality

Post
12/18/13

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NOV 18 2013
Air/Toxics & Inspection Coordination Branch
6EN-A

EPA REGION 6 ENFORCEMENT DIVISION INSPECTION REPORT

FRS #:	**10000105726/ LAD081999724**	D&B #	**0811999724**
Media #:RMP	**1000019402**	Permit #	**2580-0013-11**
Inspection Type:	**RMP**		
Inspection Date:	**04-29-2013 -05-02-2013**		
Company Name:	**DOW CHEMICALDOW CHEMICAL - LA REFINING DIVISION**		
Facility Name:	**DOW CHEMICAL PETROLEUM COMPANY**		
Physical Location:	**21255 HWY 1, HIGHWAY 61@DOW CHEMICAL Avenue**		
	Plaquemine, LA 70051-0849		
Mailing Address:	**DOW CHEMICAL P.O.BOX 150**		
	PLAQUEMINE,LOUISIANA,70765-0150		
County/Parish:	**West Baton Rouge and Assumption Parishes (encompasses 1500 acres)**		
NAICS Code:	**325199**		
Reg Programs (Ex: SIP, Title V):	LA SIP, PSD, TITLE V, OSHA,RMP		
Facility Representatives:	ldperry@dow.com (mail contact)	225-353-4316	
	RMP coordinator		
EPA Inspectors:	Minerva De Leon (Minerva De Leon) US EPA	281-983-2149	11/12/2013
EPA Lead Inspector Signature/Date	(Minerva De Leon)		11/12/2013
	Minerva De Leon, Enforcement Officer		11/12/2013
Peer Reviewer Signature/Date:	(Guadalupe Sisnia)		11/20/2013
Supervisor Signature/Date	(Samuel Tates)		
	Samuel Tates Chief of Air Surveillance Section, Enforcement Division		12/18/2013

Section I - INTRODUCTION

PURPOSE OF THE INSPECTION

One of the goals of the U.S. Environmental Protection Agency (EPA) is to protect the public and the environment from exposure to extremely hazardous chemicals. A Risk Management Program (RMP) inspection was conducted at the DOW CHEMICAL Company (DOW) LP- LA. Chemical located in Plaquemine Parish, Louisiana, on April 29, 2013 through May 2, 2013. The objectives of this inspection include working with the facility (both management and employees) to improve their chemical safety management program, and determining compliance with the Clean Air Act Section 112(r) and 40 CFR Part 68 – Chemical Accident Prevention Provisions. This facility was chosen for inspection due to the amount of flammable and toxic substances at the facility, the number of people residing within the worst case scenarios, and the facility's accident history.

I (EPA Region 6 inspector Minerva De Leon) arrived at DOW facility at 1:30 pm on May 13-17, 2013 for an unannounced inspection. I met with listed in Table 1. The scope of the inspection is to conduct a partial compliance evaluation (PCE) with the elements of the RMP for every applicable unit at the facility. It also includes evaluation of the deviations reported that pertain to RMP elements and compliance of the facility with its Title V permit provisions. DOW has many contractors on site but no union representatives participated in the inspection. They were invited and provided notice of the inspection within one hour after conducting entry.

Table 1.

Lisa Perry	DOW RMP coordinator	ldperry@dow.com (mail contact)	225-353-4316
Don Pulliam	HES Professional	On conference DOW	225-3536585
Greg Nesmith	DOW Process Safety. r	gregnesmith@dow.com	225-353-5343
Ellen Martin	DOW	ecmartin@dow.com	225-353-5321
Joel Dugas	DOW	jmdugas@dow.com	225-353-5876
Byron Brand	DOW	brand@dow.com	225-353-5313
Mark Mitchell	DOW	mtmitchell@dow.com	225-353-1869
Christine Baldridge	DOW	cebaldridge@dow.com	225-353-6252
Scott White	DOW	wswhite@dow.com	225-353-6041
Minerva DeLeon	USEPA	deleon.minerva@epa.gov	281-983-2149

FACILITY DESCRIPTION

Dow Chemical Louisiana Operations (DOW-LAO) was constructed in 1956 and has been in operation since then expanding from three units to 18 units. Today it is the largest chemical plant in the state of Louisiana employing over 2000 employees and making over 100 specialty chemicals. One of the vinyl chloride units was dismantled in 2012. The Plaquemine complex consists of a variety of covered processes within this 3000 acre chemical plant. Operations, different products used in a wide variety of consumer products such as Tupperware, antifreeze, shampoo ingredients, automotive fluids, cosmetics, and water purification. Of the 18 units, fourteen are RMP covered process. Dow – LAO uses basic natural resources such as salt and natural gas to produce the basic chemical ingredients, chlorine and ethylene, which are further used to produce the 50 products. We have 27 regulated substances present at our facility. These substances include Ethane, Propane, 1,3-Butadiene, Pentane, Chloroform [Methane, trichloro-], Propylene oxide [Oxirane, methyl-], 2-Methylpropene [1-Propene, 2-methyl-], Isoprene [1,3-Butadiene, 2-methyl-], Methyl chloride [Methane, chloro-], Butane, Chlorine, 1,3-Pentadiene, Isopentane [Butane, 2-methyl-], 2-Butene-cis, Hydrogen chloride [Hydrochloric acid], Propylene [1-Propene], Ammonia (anhydrous), Ethylene oxide [Oxirane], Epichlorohydrin [Oxirane, (chloromethyl)-], 2-Methyl-1-butene, Ethylene [Ethene], Ethyl chloride [Ethane, chloro-], Hydrogen, Isobutane [Propane, 2-methyl], Methyl ether [Methane, oxybis-], 1-Butene, Methylamine, and Methane.

Anhydrous hydrogen chloride is used at Dow -LAO to produce vinyl chloride and also sold to customers to make silicones, some of which form computer chips. Inhalation can cause coughing, choking, inflammation and ulceration of the respiratory tract.
Butadiene is a byproduct of ethylene production and is sold to make tires, automotive parts, roofing materials and other consumer products. It is a colorless, flammable gas with a mild aromatic odor. High vapor concentrations could cause eye, nose, throat irritation and dizziness.

Chlorine is an element that occurs naturally as sodium chloride (table salt). It is used to purify 98% of our nation's drinking water, is in 85% of all medicines, is used in hospital sanitation, and is the basic building block in the production of many of Dow - LAO's products. Some of these consumer products are laundry bleach, garden and lawn herbicides, vinyl siding for homes, and PVC piping and fittings. Chlorine is a greenish yellow gas with a strong, irritating odor. The vapor can be irritating to the eyes, nose and throat.

Section II - OBSERVATIONS

PART 68—CHEMICAL ACCIDENT PREVENTION PROVISIONS

Subpart A—General

68.3 Definitions.

Accidental release means an unanticipated emission of a regulated substance or other extremely hazardous substance into the ambient air from a stationary source.

Covered process means a process that has a regulated substance present in more than a threshold quantity as determined under § 68.115.

68.10 Applicability.

DOW is a stationary source that has more than a threshold quantity of a regulated substance in a process so these regulations are applicable.

68.12 General requirements.

DOW has submitted a single RMP that reflects all covered processes. As a facility with Program 3 processes, DOW must develop and implement a management system, conduct a hazard assessment, implement the prevention requirements of 68.65 through 68.87, develop and implement an emergency response program, and submit the data elements from 68.175 in their RMP.

68.15 Management System.

The facility provided a management system with a typical organization chart that distinguished and identified the organizational structure and the positions assigned to RMP elements and their responsibilities, Management system / Organizational Chart and RMP Element Champion Table. I observed this by the organization chart that distinguished and identified the organizational structure and the positions assigned to RMP elements and their responsibilities.

Subpart B—Hazard Assessment
68.20 Applicability.

DOW is a program 3 stationary source subject to this part and thus required to prepare a worst case release scenario analysis and complete the five year accident history.

68.22 Offsite consequence analysis parameters.
68.25 Worst-case release scenario analysis.
68.28 Alternative release scenario analysis.
68.30 Defining offsite impacts—population.
68.33 Defining offsite impacts—environment.

I reviewed the documentation provided to make this analysis with any information pertaining to data reviewed for section 68.22-68.33 or any Offsite Consequence Analysis (OCA) data. The facility used the EPA OCA Guidance Reference Tables, Equations, and the PHAST Model for the worst case scenario and the alternative scenario. DOW identified environmental receptors that would be included in the distance to the endpoint. The population included in the distance to the endpoint in the Risk Management Plan was estimated using the latest US Census and information using a computer based mapping system, to two significant figures as required. No areas of concern were identified from my review.

68.36 Review and update.

DOW indicated that the OCA is reviewed and completed at least once every five years. . I reviewed this data and no areas of concern were noted.

68.39 Documentation.

DOW maintained documentation describing the vessel selected as worst case scenario, and assumptions and parameters used. A description of the scenarios identified, assumptions and parameters used, and the rationale for the selection of specific scenarios were documented by DOW including documentation for estimated quantity release rate, and duration of release, methodology used to determine distances to endpoints, and data used to estimate population and environmental receptors potentially affected.

68.42 Five-year accident history.

DOW is reporting in their RMP accident history all incidents that may cause or have caused injuries or catastrophic releases. DOW stated that they considered significant property damage over $500,000.00 dollars which is a low assessment and conservative.

Subpart D—Program 3 Prevention Program
68.65 Process safety information.

DOW provided me documentation of process safety information including information pertaining to the hazards of substances in the processes, pertaining to the technology of the process, and pertaining to the equipment in the process. DOW provided Piping and Instrument Diagrams (P&IDs), block diagrams, and process descriptions of the RMP processes.

68.67 Process hazard analysis.

I selected for review the Process Hazard Analysis (PHA) Revalidation for all applicable units at the facility included a thorough revision of one of the units including LHC2 the PHAs that was requested and reviewed with the company. There were no areas of concern with any revision of the PHA. The PHAs have been completed and revised for new and older units. They have been revised many times before the 5 year interval.

68.69 Operating procedures.

I reviewed the operation procedures for the startup procedure, normal operation procedure temporary operations, emergency shutdown procedures and emergency procedures, normal shutdown procedures and it included reviewing the operating limits for that unit, the operating procedure are also on their intranet and in control room. No area of concern was noted with the operation procedures and the content.

Upon entry to the Facility, I requested five years of certified operating procedures for all covered processes. DOW provided all certification of operating procedures for the entire facility. It appeared that some were not conducted or could not be located for the year in 2010. They did have the previous years 2008 and 2009 through 2013. DOW provided documentation for operating procedures which have been annually certified in last three years.

68.71 Training.

DOW provided training records for all employees for one year and inspectors for two years from a database training record management system. I selected one person from each unit to review their complete training history. Their training histories were provided and I reviewed operator training histories and records for maintenance workers and emergency responders. Dow also audits their contractors and provides training for that particular process on the hazards of the process.

68.73 Mechanical integrity.

DOW stated that few, if any, out of date inspections were due for what they considered critical equipment. I reviewed the fixed equipment records for five years including critical, safety, DCS, alarms and rotating equipment. I requested a list of any and all out of date inspections at DOW for all internal and external fixed, rotating equipment, electrical systems, DCS systems, monitoring systems certifications, safety and critical, alarm systems, fans, and underground piping. There were no areas of concern. In 2010 and 2011 Dow had not completed some critical instrument inspections and a few safety instrument systems but they were all completed before this inspection.

68.73 (e) Equipment deficiencies.

DOW is correcting deficiencies that were outside the acceptable limits as evident in the corrosion studies and mechanical integrity inspections that were conducted and the records that I reviewed.

68.73 (f)(2) Quality Assurance.

The facility is conducting the appropriate inspections on all the equipment.

68.75 Management of change.

I requested a list of five years of approved funded expenditures (AFEs) in order to assess if a major change took place in a covered process. After reviewing this list, I select one or two areas that have had major changes for further review of documentation associated with the AFEs. I checked the Process instrument diagrams (P&IDs) in order to inspect if the changes had been conducted on the diagrams and in the field. I also reviewed the Operating Procedures, Training, PHAs revisions, PHAs recommendations, SIS systems updates, calibrations and certifications. I also reviewed the training for individuals conducting the analyses.

DOW provided written standard operating procedures for Management of Change (MOC). This procedure addresses the technical basis for the change, the impact on safety and health, modifications or operating procedures, and authorization requirements for the proposed change. Necessary time period for the change was clearly identified as being considered in all MOCs. MOCs are broken down into three categories Emergency (requiring immediate attention), Temporary (not to exceed six months), and Permanent (changes that are made for over six months). No areas of concern were identified with the MOC procedures.

68.79 Compliance audits.

After reviewing the compliance audits prepared by DOW, it appears that the facility is going over all the elements of the RMP, finding recommendations, and assigning these technical details to staff. Compliance certifications were conducted in 2009 and October 2012. The Compliance Audit in 2012 identified many technical PHA issues which were promptly corrected.

68.81 Incident investigation.

I obtained a list of all incidents at the facility in the last five years (from 3/8/2008 to 6/11/2013). All incidents are investigated within 48 hours and a team is assigned to the recommendations and findings. The facility uses the incidents as required in the Process Hazard Analysis to identify any mitigating factors that might have been overlooked or that still leave an opportunity for improvement. DOW is reporting in their RMP accident history all incidents that may cause or have caused injuries or catastrophic releases. DOW stated that they considered significant property damage over $500,000.00 dollars which is low assessment and conservative. Incidents reviewed were selected in order to examine if they were due to failures of RMP elements. I found no areas of concern that were within the last three years and the ones that had occurred happened in the dismantled Vinyl chloride facility.

68.85 Hot work permit.

DOW stated that there were many hot work permits performed in the covered process units for the past two months: The work permits were checked off in the JHA. I requested several Hot Work permits. These permits showed that DOW was conducting LEL readings. Also, it appeared that DOW was conducting a job hazard analysis and reviewing many of them with not only employees but contractors.

68.83 Employee participation.

DOW has developed and provided a copy of a written plan of action to implement the employee participation. I observed and reviewed the records and it met all the conditions as required.

68.87 Contractors.

DOW stated that it has a corporate policy which defines the requirements for the management of contractor selection and evaluation. They also provided documents which proved that they do audits on the contractor's safety performance. I was provided the audits that Dow conducts on the contractors and they also oversee the injury and accident history of the contractors.

Subpart E—Emergency Response
68.90 Applicability.

DOW is a stationary source with program 3 processes that are subject to this part and thus required to comply with the requirements of 68.95. DOW employees will respond to accidental releases of regulated substances. I inspected the fire station emergency equipment and

interviewed (the safety contractor) and explained the urgency of keeping accurate records of the emergency equipment inspections.

68.95 Emergency response program.

I was provided the DOW Emergency Operations Procedures and Plan. This emergency plan includes procedures for informing the public and Parish local emergency response agencies about accidental releases. First aid and emergency medical treatment is mentioned in the emergency procedure; more hazard specific medical treatment information was housed in a separate medical file. This document is available on the same share point site with the emergency response plan and available to all employees. Procedures of the use, maintenance, inspection, and testing of emergency equipment were provided to EPA. I reviewed all training records and inspections of the emergency equipment for all employees in the fire brigade, and training.

Subpart G—Risk Management Plan
68.150 Submission.

DOW has submitted a single RMP which includes the information required in 40 CFR 68.155.

Section III – AREAS OF CONCERN

No areas of concern with any elements of the of the risk management plan were observed which would prevent the facility from implementing the risk management plan successfully.

Section IV – FOLLOW UP

Dow corrected their Management system (68.15) in order to be consistent with the elements of the RMP and not just OSHA's PSM. This concern was resolved on site.

Dow also addressed the emergency response plan on site by including the health considerations of exposure for every toxic chemical into the emergency plan during this inspection. Dow had the emergency information but it was not located within the emergency response plan as required. Dow corrected this immediately and no other area of concern is noted.

Attachments
All attachments are found in Dow Confidential file includes:
In one Folder labeled as CBI labeled with attachment numbers
A. Management system,
B. Employee Participation Plan,
C. PHA revision, compliance audits,
D. Fixed equipment mechanical integrity includes sprinkler system audit, edms release notices,
E. SIS inspections critical equipment, IF inspections, Fire equipment inspections
F. DOW Siting and near miss procedure
G. CD with other CBI RMP information

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L434 vol 24

EPA United States Environmental Protection Agency

Region 6 Compliance Assurance and Enforcement Division
INSPECTION REPORT

Inspection Date(s):	September 17 – 19, 2013		
Media:	Air		
Regulatory Program(s)	Title V		
Company Name:	**Axiall Corporation**		
Facility Name:	**Plaquemine Facility**		
Facility Physical Location:	26100 Louisiana Highway 405 South		
	Plaquemine, LA 70765		
Mailing address:	P.O. Box 629		
	Plaquemine, LA 70765		
County/Parish:	Iberville Parish		
Facility Contact:	Ms. Hillary Garner	Manager, Environmental Services	
	hillary.garner@axiall.com		
FRS Number:	110000613747		
Permit Number(s):	2030-V1, 2224-V2, 2906-V3, 2056-V1, 1267-V2, 881-V4, 2907-V2		
AFS Number:	22-047-00002		
NAICS:	325211		
SIC:	2821		
Facility Representatives:	Hillary Garner	Manager, Environmental Services	(225) 685-2632
	Katie Roberson	Environmental Engineer	(225) 685-2644
	Dave Goldsmith	International Regulatory Specialist	(225) 685-2677
	Tommy Dispenza	Sr. Health & Safety Professional	(225) 685-2790
EPA Inspectors:	Dorothy Crawford	USEPA / 6EN-AT	(214) 665-2771
	Jennifer Gibbs	USEPA / 6EN-AT	(214) 665-7347
	Craig Lutz	USEPA / 6EN-AT	(214) 665-2190
	Greg Valentine	USEPA / 6EN-AT	(214) 665-3111
State Inspector(s):	Cory Lormand	LDEQ – Capital Region	(225) 219-3040
	Yanfu Zhao	LDEQ – Capital Region	(225) 219-3613
Other Inspector(s):	N/A	N/A	N/A
	N/A	N/A	N/A

Metadata		
	Title:	Axiall Corporation Plaquemine Facility Plaquemine Iberville Parish Louisiana
	Author:	US EPA Region 6 Compliance Assurance and Enforcement Division Dallas TX
	Subject:	Clean Air Act Excess Emissions Inspection Report
	Keywords:	Excess emissions, Clean Air Act Inspection, CAA Inspection, Axiall, Plaquemine

EPA Lead Inspector Signature/Date	Dorothy Crawford	1/10/14 Date
Supervisor Signature/Date	Craig Lutz	1-10-14 Date

Section I – INTRODUCTION

PURPOSE OF THE INSPECTION

During September 17 - 19, 2013, an unannounced Clean Air Act (CAA) partial compliance evaluation (PCE) was conducted by the United States Environmental Protection Agency (EPA) – Region 6 at the Axiall Corporation – Plaquemine facility (Facility) located at 26100 Louisiana Highway 405 South, Plaquemine, Louisiana. The inspection was conducted under the authority granted by Section 114 of the CAA. The purpose of the inspection was to survey all operating process units to locate excess emissions from leaks, unpermitted releases, or other discharges to ambient air that do not conform with permit requirements. During the inspection, we used the following monitoring equipment to locate emissions: 1) two FLIR® Infrared cameras (IR cameras), 2) Ion Science® PhoCheck Tiger® Photoionization Detectors (PIDs), and 3) a Thermo Scientific® Toxic Vapor Analyzer (TVA) 1000B.

Upon entry, Ms. Dorothy Crawford, Ms. Jennifer Gibbs, Mr. Craig Lutz, and I (Mr. Greg Valentine) proceeded to the guardhouse to check in, obtain visitor badges, and view the required safety video. We were joined there by Messrs. Cory Lormand and Yanfu Zhao, Louisiana Department of Environmental Quality (LDEQ) CAA inspectors. Ms. Hillary Garner, Manager, Environmental Services, was notified of our arrival by the guards and met us at the guardhouse. Mr. Lutz, Ms. Gibbs, and I presented our credentials. Ms. Crawford also presented her government identification to Ms. Garner, who then escorted us to a conference room, where we were met by Ms. Katie Roberson, Environmental Engineer, and Mr. David Goldsmith, International Regulatory Specialist.

FACILITY DESCRIPTION

The facility was originally built by Georgia-Pacific in 1968 and is more than 900 acres in size. On January 28, 2013, PPG Chemicals and Georgia-Pacific merged and changed the name of the facility from Georgia-Pacific to Axiall. The facility employs 450 Axiall employees and approximately 550 contractors. The facility operates twenty-four hours a day, seven days a week, and 365 days a year. There are four production units: a Chlorine Caustic (CC), Vinyl Chloride Monomer (VCM), Polyvinyl Chloride (PVC), and Phenol (Aromatics) unit; a Cogeneration unit, a Utilities unit, and a Bio Treatment unit at the facility. Each production unit pre-treats wastewater prior to sending it to the Bio Treatment Plant at the north end of the facility. The facility also owns barge docks on the Mississippi River for loading and unloading of caustic and chemicals.

Upon our arrival at the conference room, Ms. Crawford conducted an entrance briefing, described the purpose of our inspection to Ms. Garner, Ms. Roberson and Mr. Goldsmith, and requested a process overview for all onsite processes. Mr. Tommy Dispenza provided a summary of the process overview, which is discussed in the paragraphs below, and flow diagrams for the four production units which are in **Appendix 1**. Additionally, during the entry briefing, Ms. Crawford informed Ms. Garner of the need for the facility representatives to alert EPA if any Confidential Business Information is provided during the inspection.

Chlorine Caustic (CC):

Saltwater is sent through the caustic/chlorine (cathode/anode) cells where direct current (DC) electricity is introduced and chlorine, caustic, and hydrogen are produced. There are approximately 270 of these cells onsite at the facility. The chlorine gas is compressed and routed

to the VCM unit. The caustic is run through an evaporator to make fifty percent caustic which is sold as a product via barge, rail car, and tanker truck. The hydrogen is sent to the Cogeneration unit to offset natural gas purchases. This unit has a scheduled maintenance shutdown approximately every three years.

VCM:

Chlorine is reacted with ethylene to make ethylene dichloride (EDC). The EDC is then cracked to form VCM. The VCM is purified and sent to the PVC unit. VCM is stored onsite in pressurized spheres. Ethylene is purchased from Shell and Exxon. This unit has a scheduled maintenance shutdown approximately every three years.

PVC:

VCM is sent to the reactors, mixed with water, catalyst, and additives and "cooked" for a few hours in a batch reaction. There are currently twenty PVC reactors at the facility. Following the reactors, the PVC slurry stream is sent through slurry strippers to remove VCM. VCM returns to the recovered VCM system to make more PVC. Wet slurry is centrifuged and PVC goes through contact dryers (i.e., PVC contacts steam coils and heat drives off VCM). PVC is shipped offsite, primarily through railcar or is stored onsite in silos. PVC resin is compounded, pelletized, and extruded by the end user. This unit has scheduled maintenance shutdowns as needed. There are five process trains so the facility can rotate outages. Operations are contingent on the inventory and availability of vinyl.

Phenol, Acetone, and AMS (Aromatics):

Cumene, which is barged in from Pasadena, Texas, is sent through oxidizers to form cumene hydroperoxide (CHP). CHP is sent through cleavage reactors with sulfuric acid and the final product is distilled into acetone, alpha methyl styrene (AMS), and phenol which are sent offsite as a product via tanker truck, barge, and rail car. The Phenol unit has scheduled maintenance shutdowns every two to three years.

Cogeneration (Cogen):

The Cogeneration unit produces 240 Megawatts per day (MW/d) of electricity, enough to power Baton Rouge, Louisiana.

Utilities (UTIL):

The Utilities unit produces clean water for use in processes, maintains fire water, and treats steam blowdowns for water reuse.

Section II – OBSERVATIONS

After making entry on September 17, 2013, we were escorted to a conference room where we conducted the entrance briefing. A sign-in sheet for the entrance briefing is provided as **Appendix 2**. Ms. Crawford explained the purpose and process of the inspection and told Ms. Garner, Ms. Roberson and Mr. Goldsmith that the plan was to conduct walk-through surveys of all process units at the Facility using IR cameras, PIDs, and TVAs. It was later determined, based on the limitations of the IR cameras (i.e., they are unable to "see" the emissions of the chemicals/constituents in the CC, VCM, and PVC

processes) and PIDs that we would only conduct the walk-through surveys in the North Tank Farm (NTF) area, Phenol unit, and Phenol Loading Operations area. Ms. Crawford requested a process description for each of the onsite processes (see the unit-by-unit discussion in the Facility Description section in Section I – Introduction).

Following the process description we had a discussion about the facility's Leak Detection and Repair (LDAR) program. It should be noted that prior to conducting this inspection, EPA sent a Clean Air Act (CAA) 114 information request to the facility requesting their LDAR monitoring data. LDAR is conducted by four facility LDAR technicians, each of which is a former unit operator. The facility conducts LDAR monitoring in-house and has done so since 2000. First attempts at repair are made by maintenance technicians from repair tickets submitted by the LDAR technicians. Following the first attempt at repair, maintenance technicians notify the LDAR coordinator (each unit has one) to have the LDAR technicians remonitor the component(s). According to facility personnel, there are approximately 63,000 LDAR regulated components onsite.

Following a short break to coordinate the remainder of the day, Ms. Crawford informed Ms. Garner, Ms. Roberson, and Mr. Goldsmith that we would break for lunch and would like to conduct walk-through surveys of the NTF and barge loading operations upon our return at 1:00 pm. During the break, we calibrated the monitoring equipment.

Upon our return from our lunch/calibration break, we returned to the conference room where Ms. Garner informed us that the facility was not loading anything at the barge loading docks. Due to the IR camera's inability to detect caustic emissions, we decided to focus our efforts on the NTF.

The following subsections describe the emissions monitoring activities that were conducted in each process/loading area. A Facility Plot Plan is provided as **Appendix 3**. Please note the Bio Treatment unit is located to the north, outside the Plot Plan boundary. Fugitive Emissions Investigation Logs, used for recording information the inspection team found during the process unit walk-through surveys, are provided as **Appendix 4**. These subsections are arranged in chronological order.

North Tank Farm:

We departed for the NTF (shown on the Facility Plot Plan, provided as **Appendix 3**, north of the UTIL and Phenol areas) where we were joined by Mr. Odis Sanders, Senior LDAR Technician, and Mr. Brian Collier, LDAR technician. We used two IR cameras and two PIDs to detect Volatile Organic Compound (VOC) emissions and two TVAs to quantify the emissions, when possible. Prior to entering the NTF, we scanned the area with the IR camera and discovered an acetone scrubber that had been permanently removed from service, according to facility personnel, emitting uncontrolled vapors (see **Appendix 5**, Videos 1, 2 (close-up) and 3 (rainbow pallet)). Due to the location of the emission point on the scrubber, we were unable to obtain a quantifying measurement with the TVA. During the daily end of day exit briefing on Wednesday, September 18, 2013, Ms. Garner informed us that the scrubber is connected to two acetone tanks and neither tank is blocked or blinded from discharging to the scrubber. Since acetone was delisted as a VOC in 1995, the facility does not consider it a requirement to control or treat the emissions. As we proceeded into the NTF, we observed a gauging hatch on an acetone tank (east tank) emitting at 89,100 parts per million (ppm) (see **Appendix 5**, Video 4 and **Appendix 6**, Photograph 1). No facility LDAR technician accompanied us on the climb to the top of the tank; therefore, we have no confirmation reading from the facility. During the daily end of day exit briefing on Wednesday, September 18, 2013, Ms. Garner informed us that they are looking at other designs for the hatch (e.g., new gasket). She indicated that the facility planned to do

something to correct the issue with the hatch. Next, we proceeded along the west side of the NTF where we observed emissions from a Catalytic Thermal Oxidizer (CTO) attached to a cumene storage tank (see **Appendix 5**, Video 5, see **Appendix 7** for operational data for the CTO for the hours of 2:30 pm to 3:30pm on Tuesday, September 17, 2013). Due to the location of the emission point and the heat of the CTO, we were unable to obtain a quantifying reading of the emissions using the TVA. During the daily end of day exit briefing on Wednesday, September 18, 2013, Ms. Garner informed us that the CTO is set at 600°F (with a minimum temperature of 550°F and a maximum temperature of 1200°F) and that it is a permitted emission point and the emissions are reported. Ms. Garner also indicated the CTO is not required by the regulations, but is used to reduce emissions from the cumene tank. As we continued the walk-through of the NTF, we observed a large dent at the top of the east side of the cumene storage tank (see **Appendix 6**, Photograph 2. IR video of the emissions exiting the hole in the tank can be seen in Video 6 in **Appendix 5**. According to facility personnel, the internal support structure of the tank was damaged and collapsed causing the damage to the tank that we observed. We were unable to obtain a definitive answer to how this damage was caused or how long ago the damage occurred. During the daily end of day exit briefing on Wednesday, September 18, 2013, Ms. Garner informed us that the project to empty the tank into another tank and repair the damage in the current tank was awarded and is expected to be completed by the end of the year. Tank repairs also include an inspection of the tank following repairs.

Following the walk-through of the NTF, we returned to the conference room where we provided a short exit briefing to Ms. Garner and facility personnel. Ms. Crawford discussed the areas of concern we observed in the NTF and requested that we continue the inspection at 8:00 am the following morning.

Wednesday, September 18, 2013

Upon arrival at the facility on Wednesday, September 18, 2013, we calibrated our equipment and proceeded to the conference room to coordinate the day's events. At approximately 8:50 am, we departed to the Phenol unit where we met with Mr. Brannon Devillier, Phenol Operator, and obtained monogoggles, which are required when walking within the unit due to acidic constituents in the process. We initiated the walk-through at approximately 9:00 am.

Phenol Unit:

We found a leaking process drain using the PID and then quantified the leak at 15,600 ppm with the TVA (see **Appendix 6**, Photograph 3). Facility LDAR personnel confirmed the leak at 16,000 ppm with their TVA. Next, we discovered two Open-Ended Lines (OELs) (see **Appendix 6**, Photographs 4 and 5), neither of which registered to be leaking when monitored by the TVA. Upon further investigation, facility personnel were able to determine that each OEL was double-blocked and therefore not open-ended. As we proceeded through the unit, we discovered a second leaking process drain (see **Appendix 6**, Photograph 6) that we recorded to be leaking at 5,500 ppm, using our TVA, and the facility confirmed the leak at 14,000 ppm with their TVA. A visible leak was observed emitting from pump 02-76134 (see **Appendix 6**, Photograph 7) which is attached to cleavage reactor tank 02-47014. According to facility personnel, the material found under the pump was cleavage mix. No TVA or IR recordings were collected because this was a dried up heavy liquids leak that was no longer emitting. Pump 31073 was found to be leaking at 8,400 ppm and confirmed by facility personnel at 24,800 ppm with their TVA (see **Appendix 6**, Photograph 8). We observed a facility LDAR technician tag the pump as a leaker. Prior to breaking for lunch, we observed an OEL near LDAR tag 31639 and heavy oil cooker 02-

43103 (see **Appendix 6**, Photograph 9). The TVA did not obtain a reading from the OEL. At approximately 11:40 am, we exited the Phenol unit to go to lunch.

We returned from lunch at approximately 1:00 pm, performed a mid-day drift check of our TVA (see **Appendix 8** for Calibration Forms), and then proceeded to the conference room where we reconvened with the facility personnel. We returned to the Phenol unit at approximately 1:20 pm. We found a sample port leaking at 13,500 ppm and the facility LDAR personnel confirmed the leak at 3,600 ppm with their TVA (see **Appendix 5**, Video 7 and **Appendix 6**, Photograph 10) near the heavy end tower reflux pump area. According to facility personnel, the sample port is permitted. Next, we found a leaking pipe under the stormwater sump grate (see **Appendix 5**, Video 8 and **Appendix 6**, Photograph 11) near the heavy end tower reflux pump area and a phenol drainage drum. We monitored the pipe and found it to be leaking at a concentration of 30,000 ppm and the facility personnel confirmed the leak at a concentration of 45,000 ppm with their TVA. As we proceeded through the Phenol unit, we observed an open valve discharging process wastewater (see **Appendix 6**, Photographs 12 and 13) to the surface (concrete) and draining to an open grate that ultimately drains to the wastewater treatment plant (WWTP/Bio Treatment Plant). There was a tag (labeled work order 392644) in the area of the open valve. Facility personnel consider this stream to be low ppm wastewater and are sending it via surface exposed drainage. Ms. Crawford obtained readings of 100 to 200 ppm using our TVA at two to four inches above the water surface in the drain under the grate downstream from the discharge point. Ms. Crawford obtained a reading of less than 1 ppm from the open grate drain at a location approximately 15 feet upstream of where the process wastewater entered the open grate drain. It was not determined during the inspection if the open grate drain receiving the process wastewater conveyed the flows to the oil/water separator located near the Phenol Tank Farm inspected on September 19, 2013 (see below). Ms. Crawford observed the process wastewater discharge earlier when the team left the Phenol unit for lunch. When we inquired about the reason for this discharge, Mr. Devillier said there was too much process wastewater for the piping system to handle. Mr. Lutz asked if they had made a determination on the wastewater being discharged (i.e., Group 1 Wastewater Stream or Group 2 Wastewater Stream under the HON). Ms. Roberson responded that they would have to do some investigating before they could provide an answer. During the exit briefing on Thursday, September 19, 2013, Ms. Garner told us that a determination had been made and the wastewater being discharged had total VOC less than 500 ppm. Mr. Lutz asked when the determination had been made and Ms. Garner admitted that it was made after our concern was brought to their attention. We completed the walk-through of the Phenol unit at approximately 3:40 pm and returned to the conference room to conduct the daily end of day exit briefing. The process wastewater discharge was observed as we left the Phenol unit.

Ms. Crawford conducted the daily end of day exit briefing and notified Ms. Garner of the issues that were discovered during the walk-through. Ms. Garner then addressed the issues that we discovered the previous day (refer to the second paragraph under the NTF section above). It was decided that we would start again at 8:00 am the following morning and we would concentrate our efforts on the loading racks and docks, if appropriate. We departed the facility at approximately 4:15 pm.

Thursday, September 19, 2013

Upon arrival at the facility on Thursday, September 19, 2013, we calibrated our equipment then proceeded to the conference room. We requested to observe all loading rack operations at the facility. According to facility personnel there was one loading rack that would be loading caustic and phenol and the barge loading operations at the dock were only loading caustic. We proceeded to the loading rack at approximately 8:30 am.

Loading Racks:

When we arrived at the loading rack (shown on Facility Plot Plan provided as **Appendix 3**, north of Phenol area, east of NTF) we were told that we had just missed a phenol truck loading but a second truck would be there shortly. We were delayed for nearly two hours due to cancellations of trucks that were suppose to load phenol. A truck finally arrived and was weighed at approximately 10:20 am and began loading at approximately 10:35 am. We observed the loading operations using two IR cameras and two PIDs. Neither camera detected emissions and the PIDs recorded minimal deflections from background. The truck finished loading at approximately 10:55 am and we proceeded to the phenol process tanks on the south side of the Phenol unit.

Phenol Process Tank Farm:

While conducting an inspection of the phenol process tank farm (shown on Facility Plot Plan provided as **Appendix 3**, southern portion of Phenol area) Ms. Gibbs discovered an oil/water separator, also referred to as the sump, that was emitting VOCs at concentrations of 1,000 to 1,500 ppm at two separate openings (see **Appendix 5**, Video 9). Ms. Garner stated the separator, or sump, contained oil and stormwater. Facility LDAR Technicians confirmed the readings with a concentration of 2,390 ppm with their TVA. The separator was located on the east side of the phenol process tank farm.

We returned from lunch at approximately 1:30 pm and adjourned to the conference room to prepare for our 2:00 pm exit briefing. A sign-in sheet for the exit briefing is provided as **Appendix 9**.

The exit briefing began at 2:00 pm on Thursday, September 19, 2013, with introductions of all attendees. Ms. Crawford then reviewed what we did during the inspection, equipment we used, and what we observed each day during the inspection, as well as, the chronic ambient air issues throughout the phenol unit. There were numerous areas where the PID detected elevated readings but a source could not be found, leading us to believe that the unit was not as "tight" as it could be. Areas of Concern (AOC) discovered during the inspection are discussed above and listed in Section III – Areas of Concern, below. Additionally, Ms. Crawford discussed the process following the inspection (e.g., the report writing, quality assurance/quality control steps for the report, and the assigning of an enforcement officer) with the facility personnel. Assignment of an inspection report to an enforcement officer does not necessarily mean an enforcement action is to follow. It was also discussed that I would be the report writer and Ms. Gibbs would be the enforcement officer. We finished the exit briefing by answering any questions the facility personnel had and thanked them for their time.

Following the exit briefing, Ms. Garner discussed some of the repairs that were made on AOC we discovered. The leaking pipe (gooseneck) under the grate was disconnected and blinded. The gauge hatch on the acetone tank was C-clamped down and will be replaced with a more appropriate hatch/cap. She reiterated that the contract had been awarded to build a pipeline from the damaged

cumene tank to another tank in order to transfer cumene from the damaged tank to allow for repairs. When asked during the exit briefing, facility representatives were unable to provide information on the approximate time frame for when the cumene tank was damaged. Copies of IR videos and digital photographs were provided to Ms. Garner by Mr. Lutz. Lastly, I asked who would serve as our Point-of-Contact (POC) for questions and for the final report. Ms. Garner is to receive the final report and Ms. Roberson is the POC for questions/requests. We departed the facility at 2:45 pm.

Section III – AREAS OF CONCERN

The following are concerns observed during the walk-through of the facility:

1. Acetone Scrubber (out of service) in NTF emitting
2. Acetone storage tank sample/gauging hatch in NTF emitting at 89,100 ppm
3. Emission from cumene tank CTO in NTF
4. Emissions from dent and hole in the top eastside of cumene tank in NTF
5. Leaking process drain in Phenol unit emitting at 15,600 ppm (confirmed by Facility LDAR technicians at 16,000 ppm)
6. Leaking process drain in Phenol unit emitting at 5,500 ppm (confirmed by Facility LDAR technicians at 14,000 ppm)
7. Visible leak on pump 02-76134 for cleavage reactor tank 02-47014 in the Phenol unit
8. Pump 31073 leaking at 8,400 ppm (confirmed by Facility LDAR technicians at 24,800 ppm) in Phenol unit
9. OEL near LDAR tag 31639 (Heavy Oil Cooker 02-43103) in Phenol unit
10. Sample port leaking at 13,500 ppm near heavy end tower reflux pump area (confirmed by Facility LDAR technicians at 3,600 ppm) in Phenol unit
11. Pipe under grate near heavy end tower reflux pump area and phenol draining drum in Phenol unit leaking at 30,000 ppm (confirmed by Facility LDAR technicians at 45,000 ppm)
12. Open valve discharging process wastewater (this could be a possible uncontrolled (open to air) HON Group 1 wastewater) to concrete and then to open grate/drain in Phenol unit
13. Oil/Stormwater separator emitting VOCs at 1,000 to 1,500 ppm from two separate openings in the Phenol Process Tanks area (confirmed by Facility LDAR technicians at 2,390 ppm)
14. Chronic ambient air issues throughout the phenol unit. There were numerous areas where the PID detected elevated readings but a source was never found, leading us to believe that the unit was not a "tight" as it could be.

For additional information on these AOC, see Section II – Observations, above.

Section IV – FOLLOW UP

Not applicable.

Section V – LIST OF APPENDICES

Appendix 1 – Process Flow Diagrams

Appendix 2 – Entrance Briefing Sign-in Sheet

Appendix 3 – Facility Plot Plan

Appendix 4 – Fugitive Emissions Logs

Appendix 5 – IR Video Log

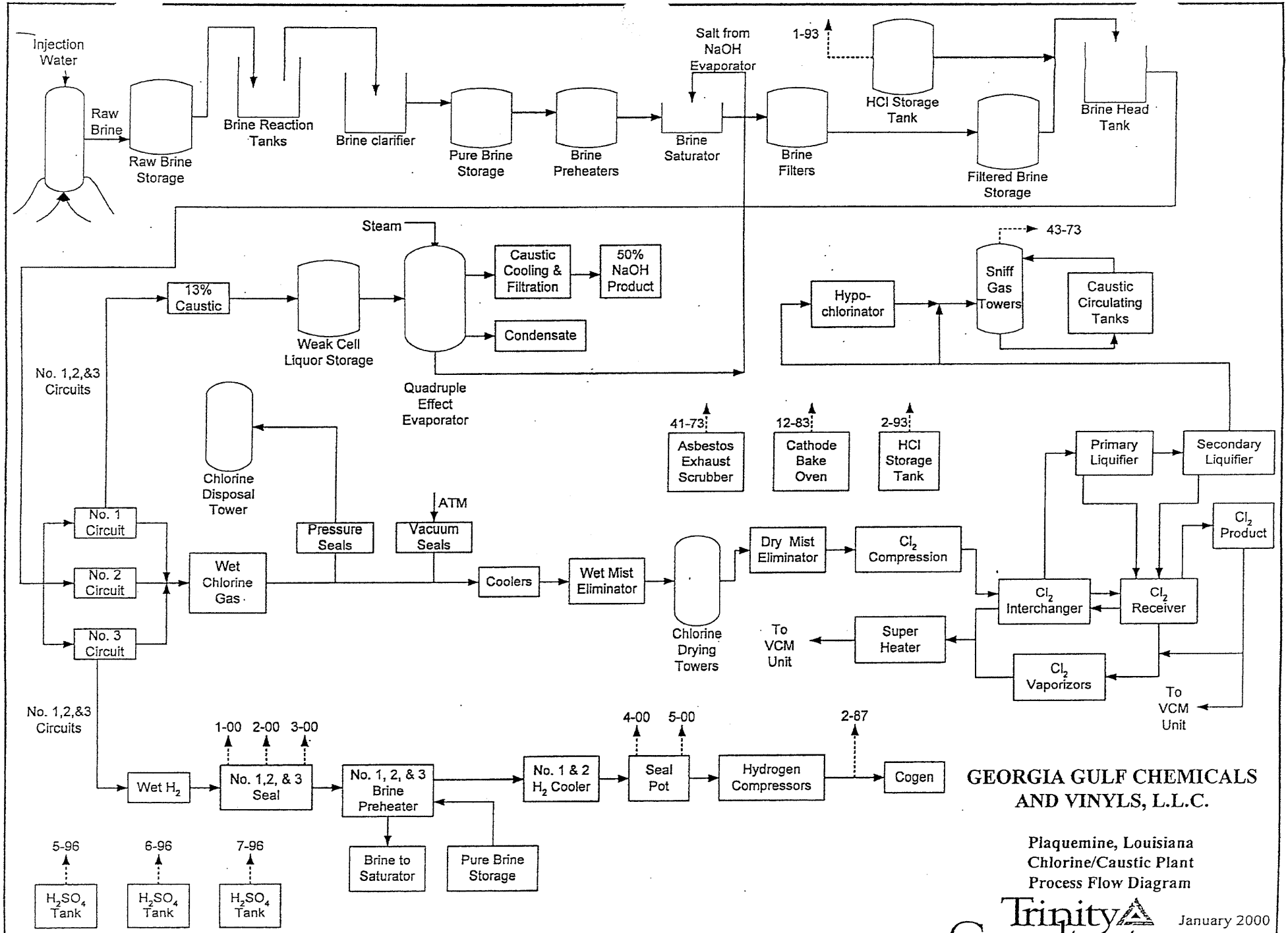
Appendix 6 – Photograph Log

Appendix 7 – Operational Data for CTO

Appendix 8 – Method 21 Calibration Logs

Appendix 9 – Exit Briefing Sign-in Sheet

APPENDIX 1

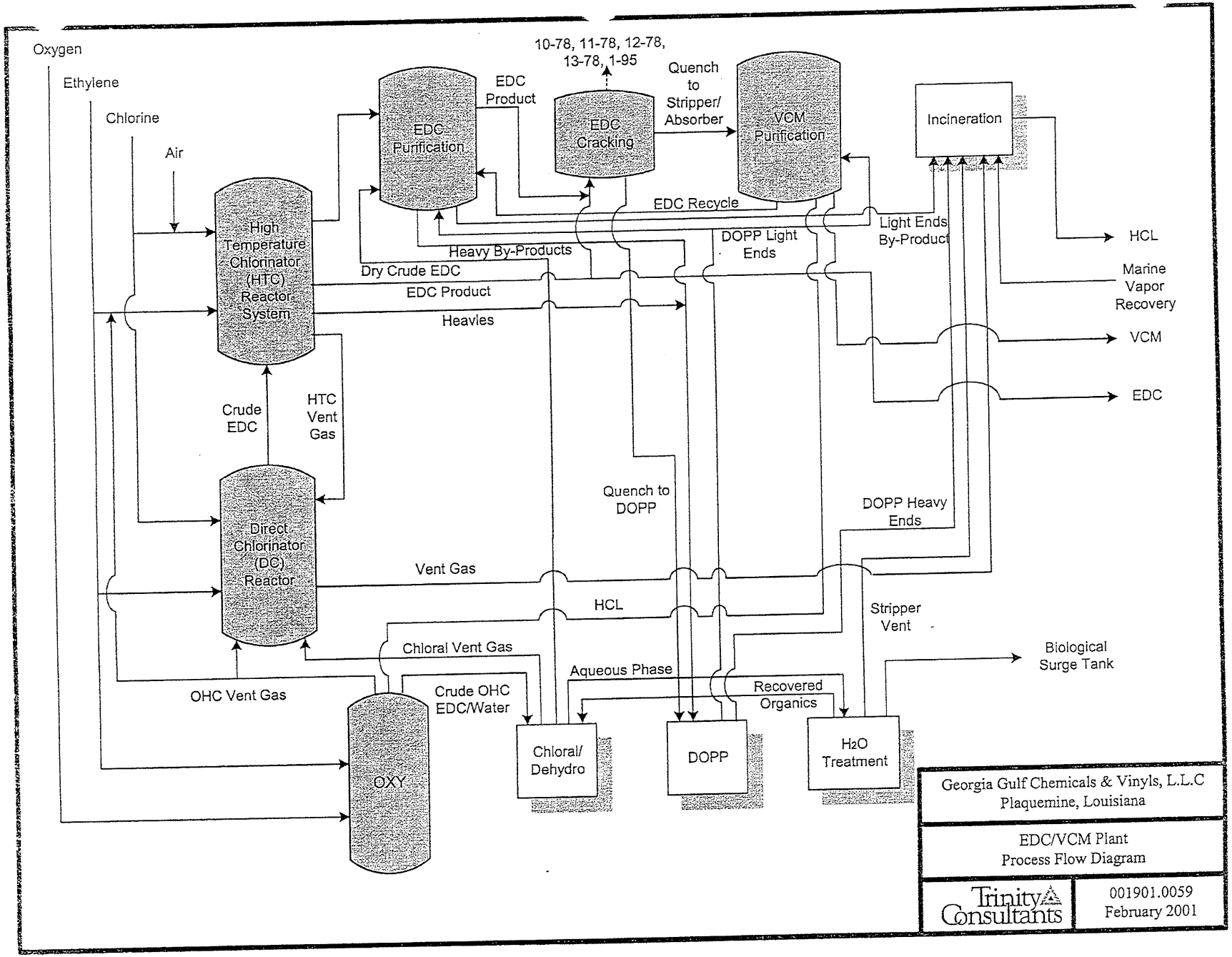


GEORGIA GULF CHEMICALS AND VINYLS, L.L.C.

Plaquemine, Louisiana
Chlorine/Caustic Plant
Process Flow Diagram

Trinity Consultants

January 2000
Project 00059

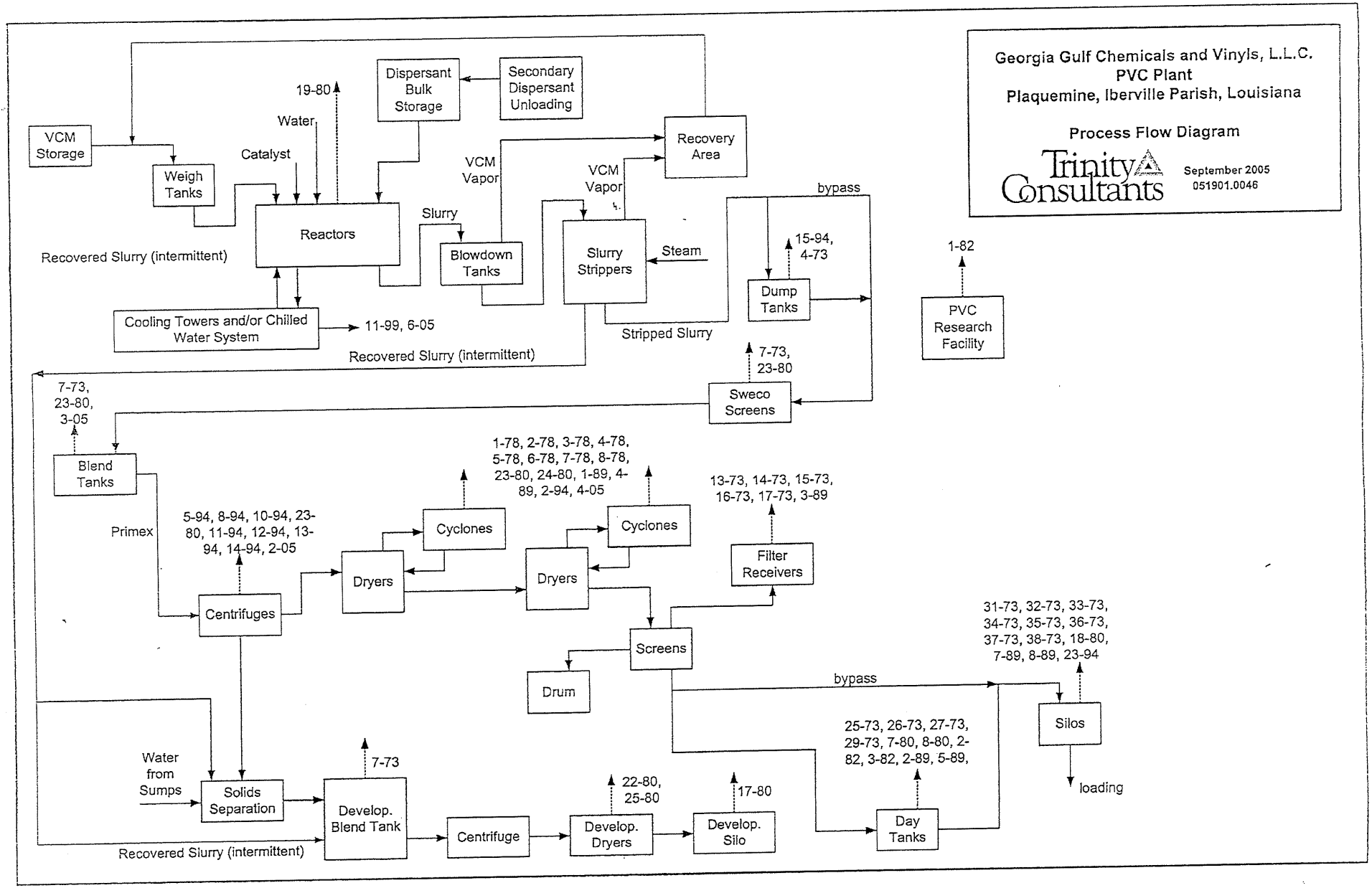

Oxygen
Ethylene
Chlorine
Air
10-78, 11-78, 12-78, 13-78, 1-95
EDC Product
Quench to Stripper/ Absorber
EDC Purification
EDC Cracking
VCM Purification
Incineration
EDC Recycle
Light Ends By-Product
DOPP Light Ends
Heavy By-Products
Dry Crude EDC
EDC Product
Heavies
HCL
Marine Vapor Recovery
VCM
EDC
High Temperature Chlorinator (HTC) Reactor System
Crude EDC
HTC Vent Gas
Quench to DOPP
DOPP Heavy Ends
Direct Chlorinator (DC) Reactor
Vent Gas
HCL
Stripper Vent
Chloral Vent Gas
Biological Surge Tank
Aqueous Phase
Recovered Organics
OHC Vent Gas
Crude OHC EDC/Water
OXY
Chloral/ Dehydro
DOPP
H2O Treatment
Georgia Gulf Chemicals & Vinyls, L.L.C
Plaquemine, Louisiana
EDC/VCM Plant
Process Flow Diagram
Trinity Consultants
001901.0059
February 2001

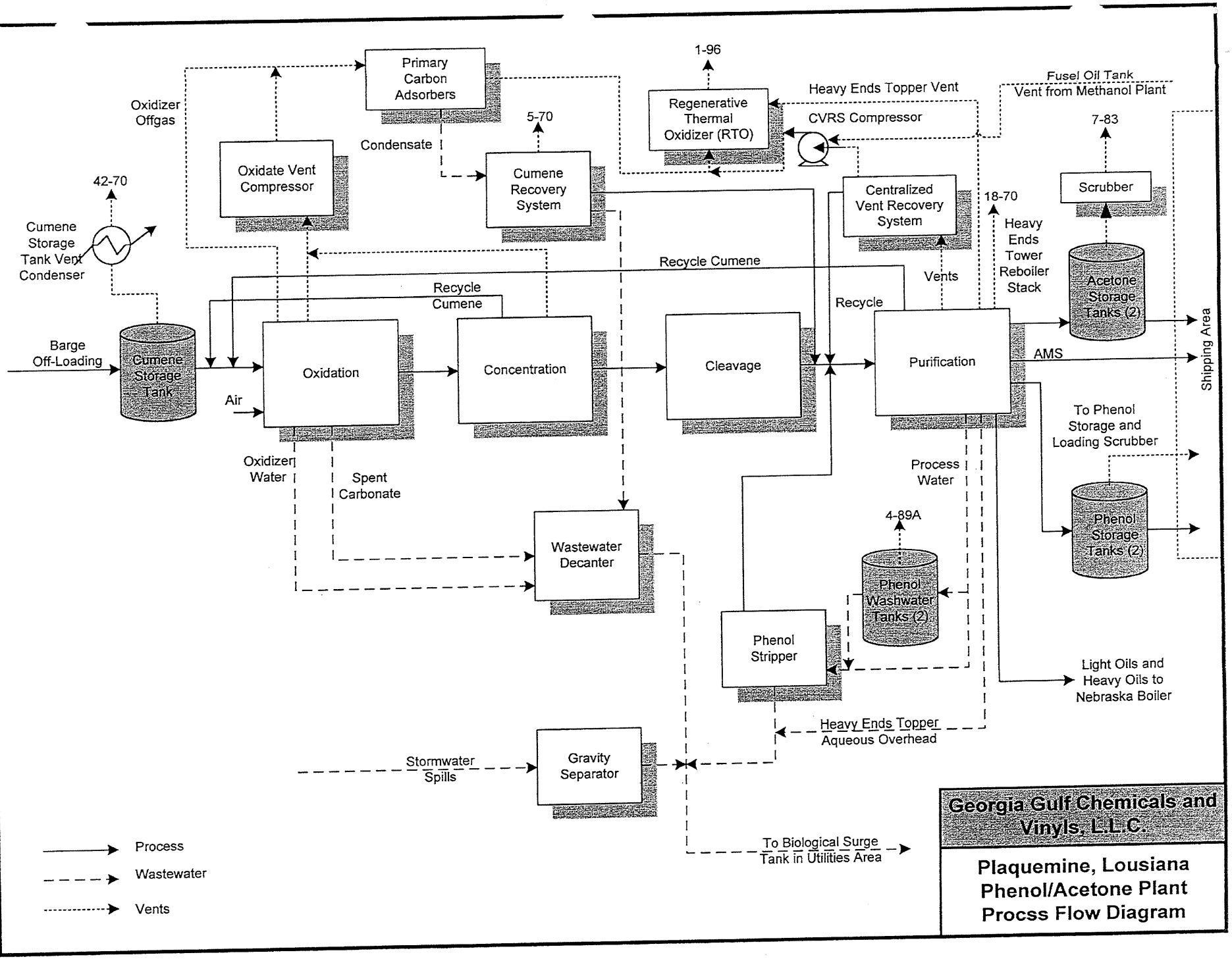
Georgia Gulf Chemicals and Vinyls, L.L.C.
PVC Plant
Plaquemine, Iberville Parish, Louisiana

Process Flow Diagram

Trinity Consultants

September 2005
051901.0046




Primary Carbon Adsorbers
1-96
Regenerative Thermal Oxidizer (RTO)
Heavy Ends Topper Vent
Fusel Oil Tank
Vent from Methanol Plant
Oxidizer Offgas
Condensate
5-70
CVRS Compressor
7-83
Oxidate Vent Compressor
Cumene Recovery System
Centralized Vent Recovery System
Scrubber
42-70
18-70
Cumene Storage Tank Vent Condenser
Heavy Ends Tower Reboiler Stack
Recycle Cumene
Vents
Acetone Storage Tanks (2)
Recycle
Recycle Cumene
Barge Off-Loading
Cumene Storage Tank
Oxidation
Concentration
Cleavage
Purification
AMS
Shipping Area
Air
To Phenol Storage and Loading Scrubber
Oxidizer Water
Spent Carbonate
Process Water
4-89A
Wastewater Decanter
Phenol Storage Tanks (2)
Phenol Washwater Tanks (2)
Phenol Stripper
Light Oils and Heavy Oils to Nebraska Boiler
Heavy Ends Topper Aqueous Overhead
Stormwater Spills
Gravity Separator
To Biological Surge Tank in Utilities Area
Process
Wastewater
Vents
Georgia Gulf Chemicals and Vinyls, L.L.C.
Plaquemine, Lousiana
Phenol/Acetone Plant
Procss Flow Diagram

APPENDIX 2

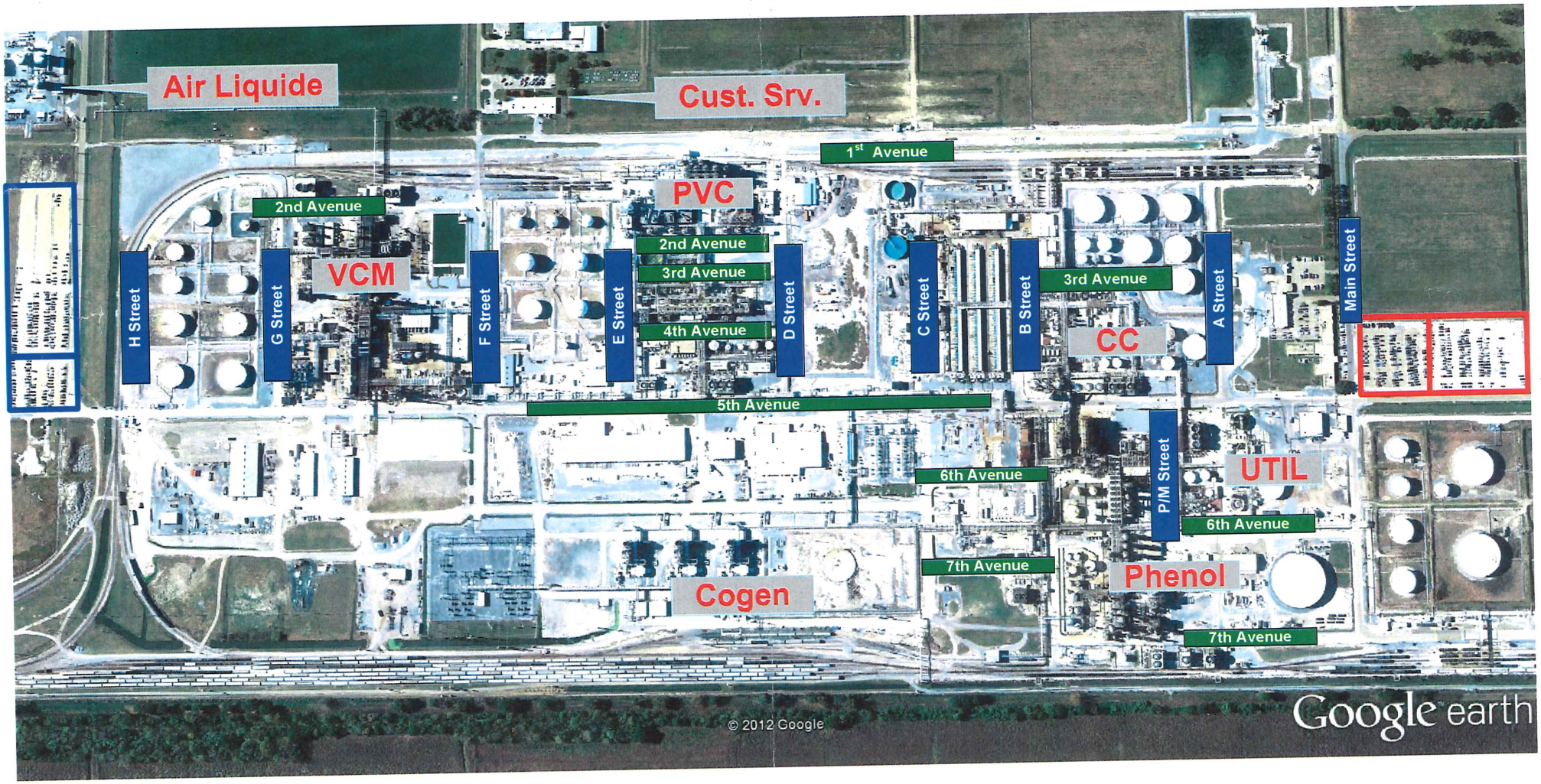
- Axiall Playgrounds 9/16/13
- Entrance Interview

Name	Representing	email	Phone
Dorothy Crawford	US EPA R6	crawford.dorothy@epa.gov	2146652771
Craig Lutz	USEPA R6	lutz.craig@epa.gov	(214)665-2190
Cory Normand	LDEQ	cory.normand@la.gov	(225)219-3040
Yanfu Zhao	LDEQ	yanfu.zhao@la.gov	225-219-3613
Dave Goldsmith	Axiall	dave.goldsmith@axiall.com	225-685-2677
Greg Valentine	USEPA R6	valentine.greg@epa.gov	(214)665-3111
Katie Roberson	Axiall	katie.roberson@axiall.com	225-685-2644
Jennifer Gibbs	USEPA R6	gibbs.jennifer@epa.gov	2146657347
Hillary Garner	Axiall	hillary.garner@axiall.com	225-685-2632

APPENDIX 3

JG-2

Axiall, Plaquemine, LA



APPENDIX 4

Fugitive Emissions Investigation Log:

Facility: ~~Eter~~ Axiall Date: 9/17/13		FLIR Camera Check List	☑ LAT/LONG On Display ☑ Temperature Spot On Display ☑ Time/Date Set ☑ Time Date On Display
Inspector Signature: ~~Jennifer Hall~~		LDAR Instrument Used	☐ COSMO ☒ TVA
		LDAR Instrument Serial No.	0523112930

	~~FLIR Image No. 2653~~	Heading of FLIR Image (e.g. Looking N)	Emission Source Equipment Type	LDAR Instrument Reading (ppm)	Location (LDAR Tag or adjunct to Tagged Component)	Photograph Numbers	LDAR Program (HON, VV Etc.)	Comments
1	2653 1330	N	☐ Valve ☐ Pump ☐ Connector ☒ Other ~~GTO stacks~~ out of servie acetone scrubber	N/A				Tank farm on N side of plant; GTO controls cumene tank
2	281 1333	N	☐ Valve ☐ Pump ☐ Connector ☒ Other ~~GTO stack~~ out of service acetone scrubber	N/A				Tank farm on N side of plant; GTO controls cumene tank
3	2654 1344	NW	☐ Valve ☐ Pump ☐ Connector ☒ Other Out of service acetone scrubber	N/A				

Close up

Fugitive Emissions Investigation Log:

Facility: Axiall Date: 9/17/13	FLIR Camera Check List	☑ LAT/LONG On Display ☑ Temperature Spot On Display ☑ Time/Date Set ☑ Time Date On Display	
Inspector Signature: Jennifer Bibb	LDAR Instrument Used	☐ COSMO ☒ TVA	
	LDAR Instrument Serial No.	052311293Ø	

	FLIR Image No.	Heading of FLIR Image (e.g. Looking N)	Emission Source Equipment Type	LDAR Instrument Reading (ppm)	Location (LDAR Tag or adjunct to Tagged Component)	Photograph Numbers	LDAR Program (HON, VV Etc.)	Comments
1	2656 1433	N	☐Valve ☐Pump ☐Connector ☒Other Tank sample hatch gauging hatch	89,100ppm		1 (148)		Acetone tank
2	2658	N	☐Valve ☐Pump ☐Connector ☒Other Catalytic Thermal Oxidizer (Cumene Tank	-		-		
3	2659 14:58	W	☐Valve ☐Pump ☐Connector ☒Other Cumene Tank East Side			2 (149)		Dent in Cumene tank

Fugitive Emissions Investigation Log:

Facility: Axiall Plaquemine LA Date: 9/18/13		FLIR Camera Check List	☑ LAT/LONG On Display ☑ Temperature Spot On Display ☑ Time/Date Set ☑ Time Date On Display
Inspector Signature: Dustin Crawford		LDAR Instrument Used	☐ COSMO ☒ TVA
		LDAR Instrument Serial No.	052311293Ø

	FLIR Image No.	Heading of FLIR Image (e.g. Looking N)	Emission Source Equipment Type	LDAR Instrument Reading (ppm)	Location (LDAR Tag or adjunct to Tagged Component)	Photograph Numbers	LDAR Program (HON, VV Etc.)	Comments
1			☐Valve ☐Pump ☐Connector ☒ Other Process Drain too much steam	15,600 ppm (EPA)		3 (150) 9:55 AM		~16,000 ppm facility LDAR tech
2			☐Valve ☐Pump ☐Connector ☒ Other open cap			4 (151) 10:06		NO LDAR Reading Double blocked acetone
3			☐Valve ☐Pump ☐Connector ☒ Other open cap EPA Bottom			5 (152) 10:13		Double blocked Phenol no LDAR reading

Fugitive Emissions Investigation Log:

Facility: Axiall Plaquemine LA Date: 9/18/13		FLIR Camera Check List	☐ LAT/LONG On Display ☐ Temperature Spot On Display ☐ Time/Date Set ☐ Time Date On Display
		LDAR Instrument Used	☐ COSMO ☒ TVA
		LDAR Instrument Serial No.	052311293Ø

Inspector Signature: Dusty Crawford

	FLIR Image No.	Heading of FLIR Image (e.g. Looking N)	Emission Source Equipment Type	LDAR Instrument Reading (ppm)	Location (LDAR Tag or adjunct to Tagged Component)	Photograph Numbers	LDAR Program (HON, VV Etc.)	Comments
1			☐Valve ☐Pump ☐Connector ☒Other Process Drain	5,500 ppm EPA		6 (153) 10:40 am		-14,000 Facility LDAR Tech -last turnaround 8/9-28/13
2			☐Valve ☒Pump Visible leak ☐Connector ☐ Other	-		7 (154) 10:46		-Pump 02-76134 -Cleaver Rx Tank 02-47014 Cleavage Mix
3			☐Valve ☒Pump Pump 31073 ☐Connector ☐ Other	8400 EPA		8 (155) 11:03 am		-24,800 Facility LDAR Tech -Tagged

Fugitive Emissions Investigation Log:

Facility: Axiall Date: 9/18/13	FLIR Camera Check List	☑	LAT/LONG On Display
		☑	Temperature Spot On Display
		☑	Time/Date Set
		☑	Time Date On Display
Inspector Signature: Dusty Crawford	LDAR Instrument Used	☐	COSMO
		☒	TVA
	LDAR Instrument Serial No.	0523112930	

	FLIR Image No.	Heading of FLIR Image (e.g. Looking N)	Emission Source Equipment Type	LDAR Instrument Reading (ppm)	Location (LDAR Tag or adjunct to Tagged Component)	Photograph Numbers	LDAR Program (HON, VV Etc.)	Comments
1			☐Valve ☐Pump ☐Connector open end ☒Other			9 (156) 11:30 am		Near LDAR tag 31639 'Heavy 0.1 Cooker' 02-43103
2			☐Valve ☐Pump ☐Connector Sample Port ☒Other	13500 ppm EPA		10 (157) 14:02 pm		-3,600 Facility LDAR Tech -'Permitted' - Heavy End Tower Reflux Pump Area'
3	2661 2:13 pm		☐Valve ☐Pump ☐Connector Pipe under grate (crook) ☒Other	30,000 ppm EPA		11 (158) 14:06 pm		-45,000 Facility LDAR Tech -Near 'Heavy End Tower Reflux Pump Area' +'Phenol Drainage Drum'

Fugitive Emissions Investigation Log:

Facility: Axiall Plaquemine LA Date: 9/18/13	FLIR Camera Check List	☑ ☑ ☑ ☑	LAT/LONG On Display Temperature Spot On Display Time/Date Set Time Date On Display
Inspector Signature: [signature]	LDAR Instrument Used	☐ ☒	COSMO TVA
	LDAR Instrument Serial No.	0523112930	

	FLIR Image No.	Heading of FLIR Image (e.g. Looking N)	Emission Source Equipment Type	LDAR Instrument Reading (ppm)	Location (LDAR Tag or adjunct to Tagged Component)	Photograph Numbers	LDAR Program (HON, VV Etc.)	Comments
1	285 2:14 pm		☐Valve ☐Pump ☐Connector ☒Other Sample Port					Sample Port Heavy Ends Tower
2			☐Valve ☐Pump ☐Connector ☒Other Process Water - Concrete to Drain/grate			12 (159) 15:23 pm		Open valve, discharge to concrete, drain to valley with grate, on to wastewater plant
3			☐Valve ☐Pump ☐Connector ☒Other Process Water - Source			13 (160) 15:24 pm		" " Source, valve open

Fugitive Emissions Investigation Log:

Facility: Axiall Date: 9/19/13		FLIR Camera Check List	☑ LAT/LONG On Display ☑ Temperature Spot On Display ☑ Time/Date Set ☑ Time Date On Display
Inspector Signature: [signature]		LDAR Instrument Used	☐ COSMO ☑ TVA
		LDAR Instrument Serial No.	052311 2930

	FLIR Image No.	Heading of FLIR Image (e.g. Looking N)	Emission Source Equipment Type	LDAR Instrument Reading (ppm)	Location (LDAR Tag or adjunct to Tagged Component)	Photograph Numbers	LDAR Program (HON, VV Etc.)	Comments
1	287 11:53am	SW	☐ Valve ☐ Pump ☐ Connector ☒ Other sump	1500ppm				According to Hillary, the water in the sump was contact storm wat from units
2			☐ Valve ☐ Pump ☐ Connector ☐ Other					
3			☐ Valve ☐ Pump ☐ Connector ☐ Other					

9/19/13

APPENDIX 5

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Official Video Log

Video # 1

Video I.D.: MOV_2653	**Videographer**: Greg Valentine	**Date**: September 17, 2013	**Time**: 1:32 pm
City/Parish: Plaquemine/Iberville		**Direction (facing)**: North	**State**: Louisiana
Location: Axiall Corporation			
Subject: View of acetone scrubber, no longer in service per facility personnel, emitting uncontrolled vapors. See Videos 2 and 3, below.			

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Official Video Log

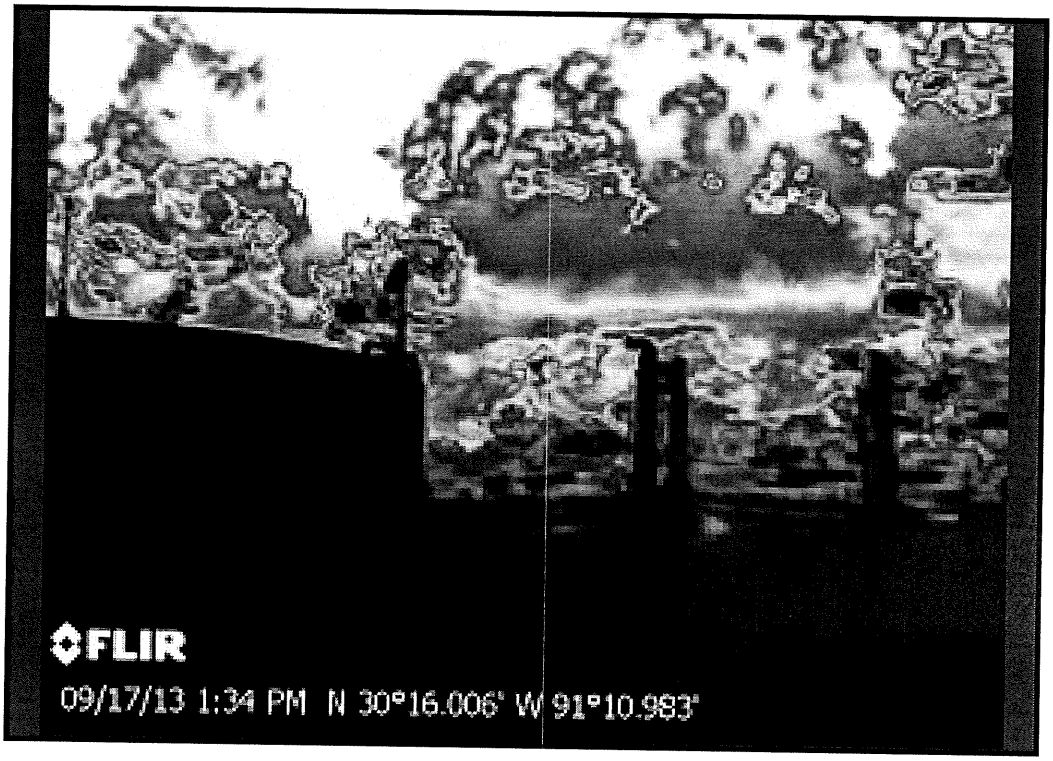
Video # 2

Video I.D.: MOV_2654	**Videographer**: Greg Valentine	**Date**: September 17, 2013	**Time**: 1:47 pm
City/Parish: Plaquemine/Iberville		**Direction (facing)**: Northwest	**State**: Louisiana
Location: Axiall Corporation			
Subject: Close-up view of acetone scrubber, no longer in service per facility personnel, emitting uncontrolled vapors. See Video 1, above, and Video 3, below.			

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Official Video Log

Video # 3



Video I.D.: MOV_0281	**Videographer**: Craig Lutz	**Date**: September 17, 2013	**Time**: 1:34 pm
City/Parish: Plaquemine/Iberville		**Direction (facing)**: North	**State**: Louisiana
Location: Axiall Corporation			
Subject: View of acetone scrubber (in rainbow palette), no longer in service per facility personnel, emitting uncontrolled vapors. See Videos 1 and 2, above.			

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Official Video Log

Video # 4

Video I.D.: MOV_2656	**Videographer**: Greg Valentine	**Date**: September 17, 2013	**Time**: 2:34 pm
City/Parish: Plaquemine/Iberville		**Direction (facing)**: Northwest	**State**: Louisiana
Location: Axiall Corporation			
Subject: View of emissions from a gauge hatch on an acetone tank (east tank) in the North Tank Farm (NTF). The emissions exiting the gauge hatch were recorded at 89,100 parts per million (ppm). See Photograph 1.			

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Official Video Log

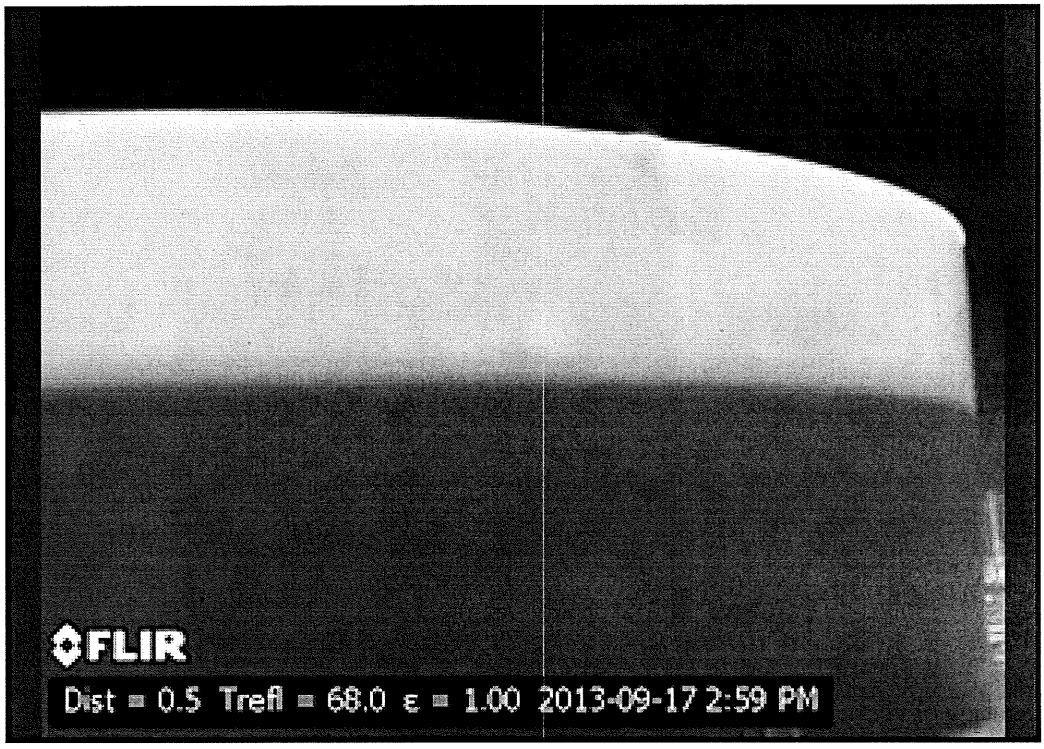
Video # 5

Video I.D.: MOV_2658	**Videographer**: Greg Valentine	**Date**: September 17, 2013	**Time**: 2:48 pm
City/Parish: Plaquemine/Iberville		**Direction (facing)**: North	**State**: Louisiana
Location: Axiall Corporation			
Subject: View of emissions exiting a Catalytic Thermal Oxidizer (CTO) that is attached to a nearby cumene storage tank. Due to the location of the emissions point and the heat of the CTO we were unable to obtain a quantifying reading of the emissions using the TVA.			

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Official Video Log

Video # 6

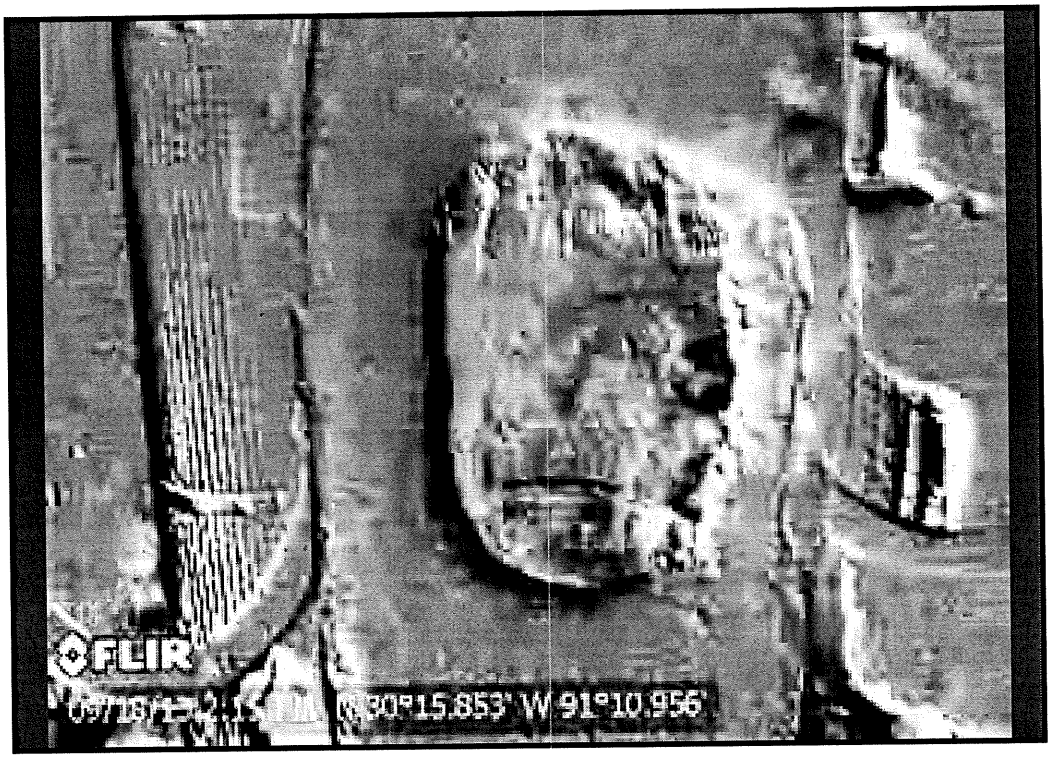


Video I.D.: MOV_2659	**Videographer**: Greg Valentine	**Date**: September 17, 2013	**Time**: 2:59 pm
City/Parish: Plaquemine/Iberville		**Direction (facing)**: Northwest	**State**: Louisiana
Location: Axiall Corporation			
Subject: View of emissions exiting large dent and hole on top of the east side of the cumene storage tank. See Photograph 2.			

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Official Video Log

Video # 7

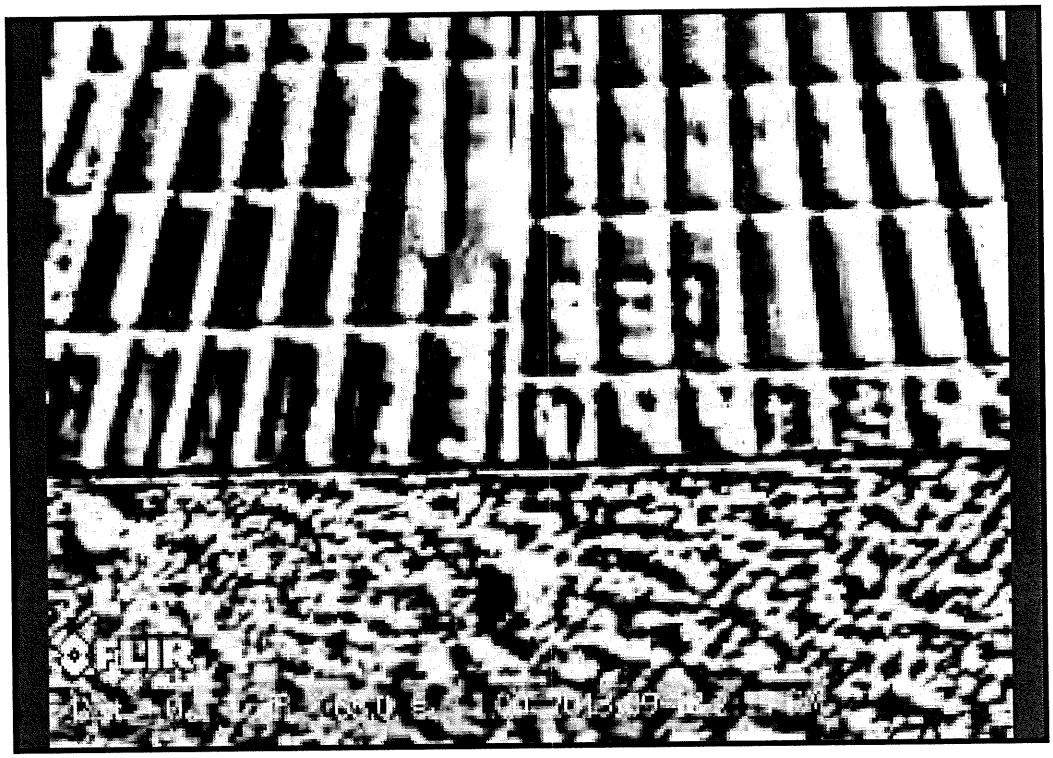


Video I.D.: MOV_0285	**Videographer**: Greg Valentine	**Date**: September 17, 2013	**Time**: 2:15 pm
City/Parish: Plaquemine/Iberville		**Direction (facing)**: North	**State**: Louisiana
Location: Axiall Corporation			
Subject: View of sample port leaking at 13,500 ppm and confirmed by facility LDAR personnel at 3,600 ppm near the heavy end tower reflux pump area. According to facility personnel, the sample port is permitted. See Photograph 10			

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Official Video Log

Video # 8



Video I.D.: MOV_2661	**Videographer**: Jennifer Gibbs	**Date**: September 18, 2013	**Time**: 2:14 pm
City/Parish: Plaquemine/Iberville		**Direction (facing)**: North	**State**: Louisiana
Location: Axiall Corporation			
Subject: View of pipe under stormwater sump grate leaking at 30,000 ppm and confirmed by facility LDAR personnel at 45,000 ppm. The pipe was located near the heavy end tower reflux pump area and a phenol drainage drum. See Photograph 11.			

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Official Video Log

Video # 9

Video I.D.: MOV_0287	**Videographer**: Craig Lutz	**Date**: September 19, 2013	**Time**: 11:53 pm
City/Parish: Plaquemine/Iberville		**Direction (facing)**: North	**State**: Louisiana
Location: Axiall Corporation			
Subject: View of oil/water separator (in rainbow palette) in the Phenol Process Tank Farm area, emitting VOCs at concentrations of 1,000 to 1,500 ppm. According to Ms. Garner, the separator, or sump, contained oil and stormwater.			

APPENDIX 6

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Official Photograph Log

Photo # 1

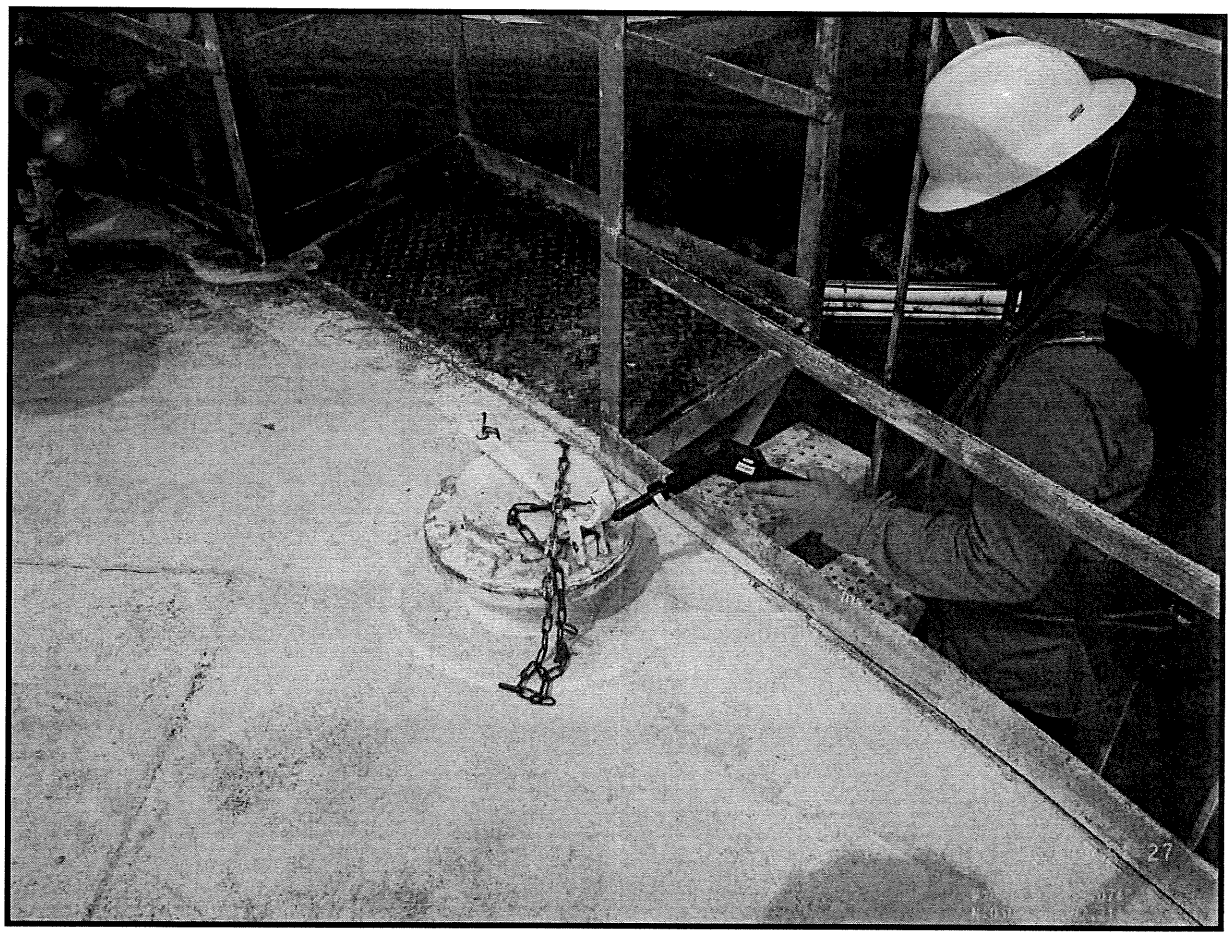


Photo I.D.: RIMG0148	**Photographer**: Dorothy Crawford	**Date**: September 17, 2013	**Time**: 2:27 pm
City/Parish: Plaquemine/Iberville		**Direction (facing)**: North	**State**: Louisiana
Location: Axiall Corporation			
Subject: View of Mr. Valentine monitoring gauge hatch with a TVA 1000 on an acetone tank (east tank) in the North Tank Farm (NTF). The emissions coming from the gauge hatch were recorded at 89,100 parts per million (ppm). See IR Video 4.			

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Official Photograph Log

Photo # 2

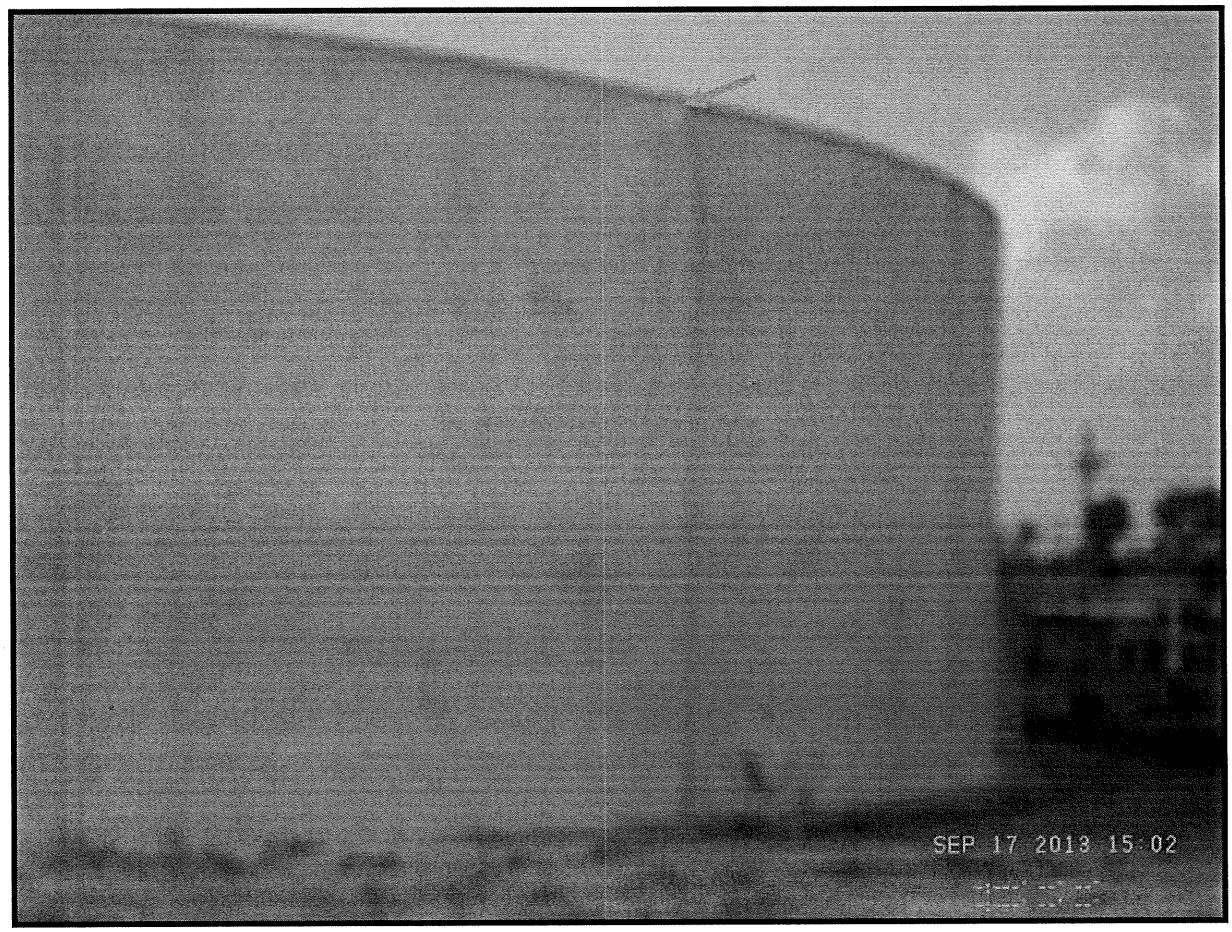


Photo I.D.: RIMG0149	**Photographer**: Dorothy Crawford	**Date**: September 17, 2013	**Time**: 3:02 pm
City/Parish: Plaquemine/Iberville		**Direction (facing)**: Northwest	**State**: Louisiana
Location: Axiall Corporation			
Subject: View (blurry) of large dent on top of the east side of the cumene storage tank. The dent is located to the left of the vertical orange stripe on the tank (see arrow) at the top edge of the tank. See IR Video 6.			

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Official Photograph Log

Photo # 3

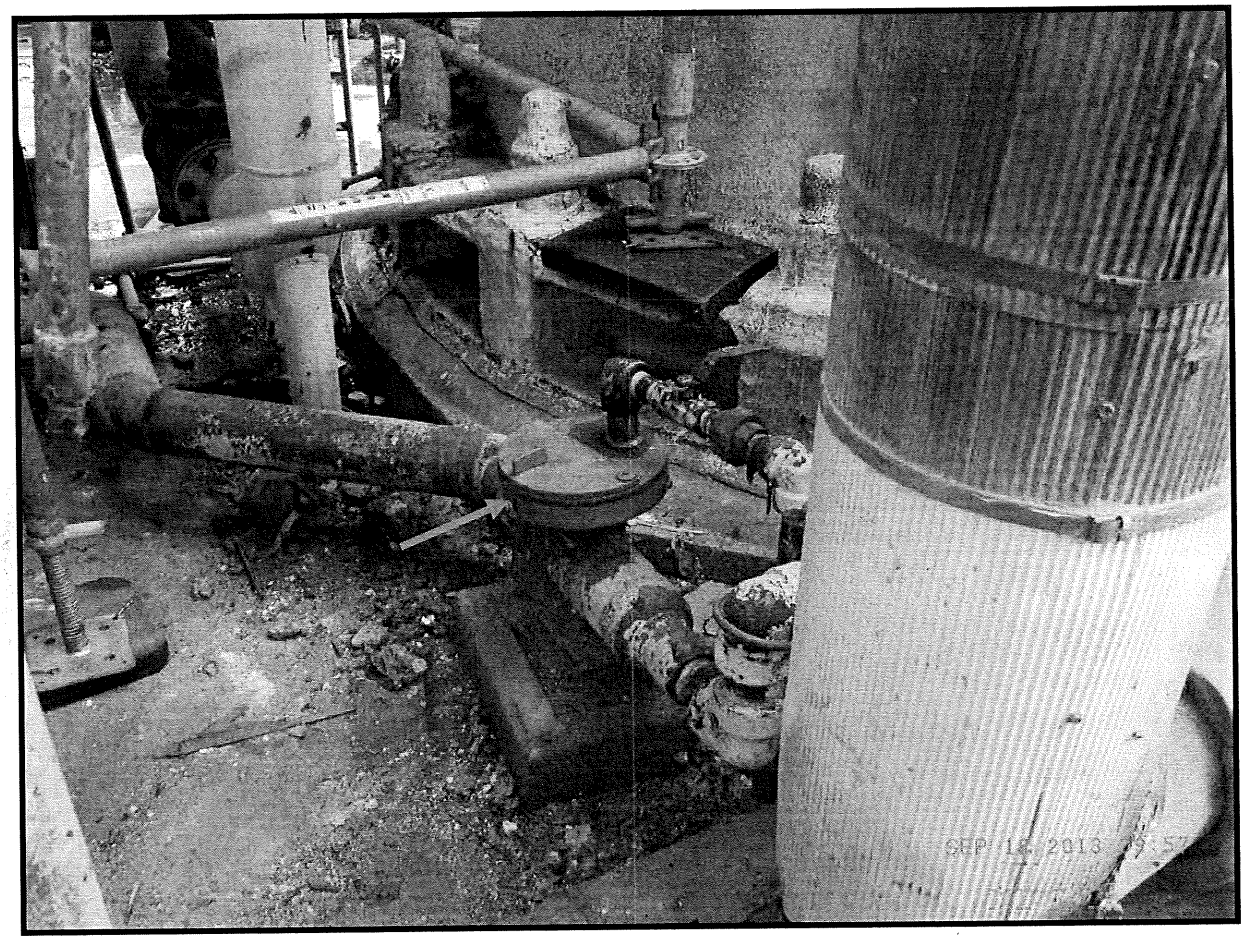


Photo I.D.: RIMG0150	**Photographer**: Jennifer Gibbs	**Date**: September 18, 2013	**Time**: 9:57 am
City/Parish: Plaquemine/Iberville		**Direction (facing)**: Downward	**State**: Louisiana
Location: Axiall Corporation			
Subject: View of process drain found to be leaking at 15,600 ppm, facility LDAR personnel confirmed the leak at 16,000 ppm.			

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Official Photograph Log

Photo # 4

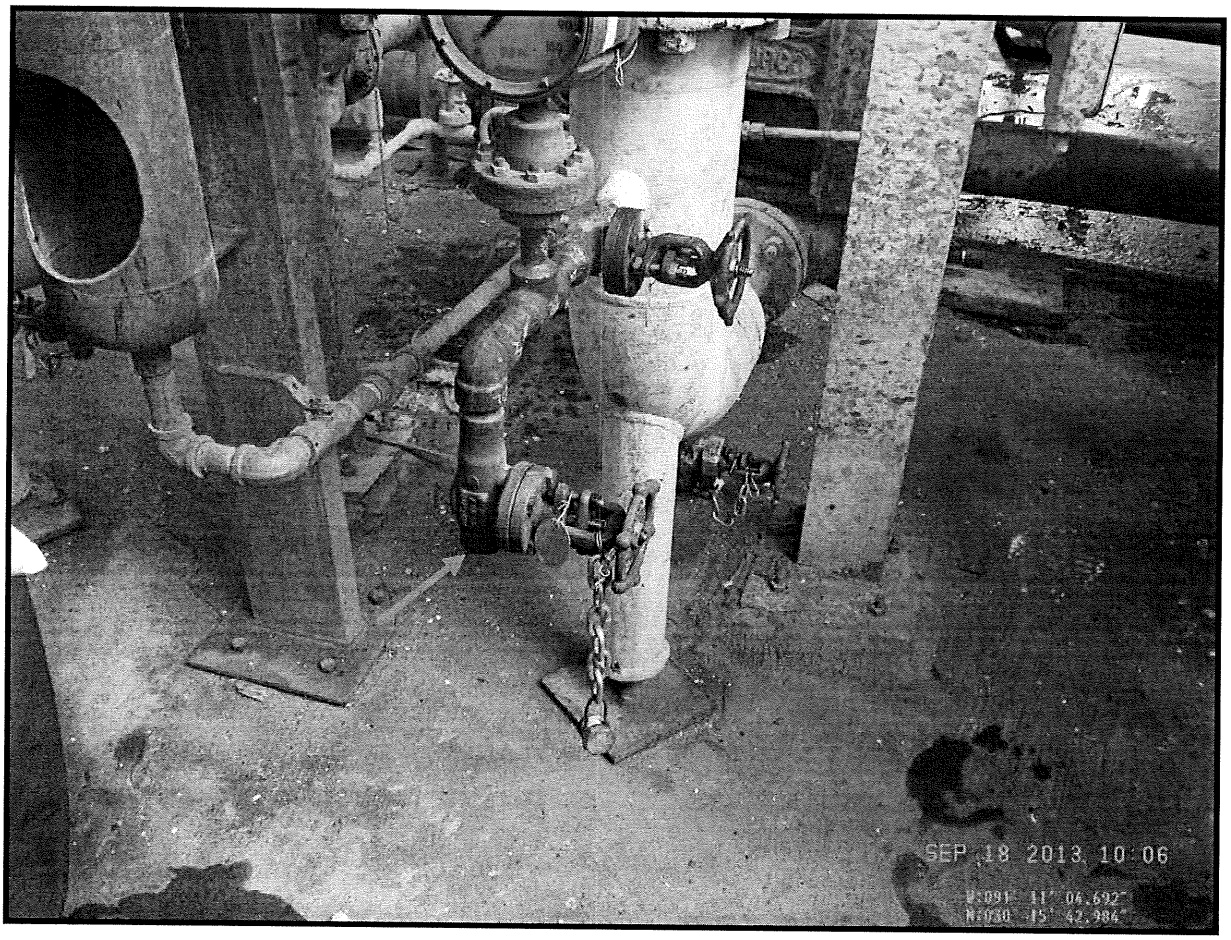


Photo I.D.: RIMG0151	**Photographer**: Jennifer Gibbs	**Date**: September 18, 2013	**Time**: 10:06 am
City/Parish: Plaquemine/Iberville		**Direction (facing)**: Downward	**State**: Louisiana
Location: Axiall Corporation			
Subject: View of suspected open-ended line (OEL) on acetone line. TVA didn't pick up any emissions. Upon further investigation, facility personnel were able to determine that the OEL was double-blocked and therefore not open-ended.			

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Official Photograph Log

Photo # 5

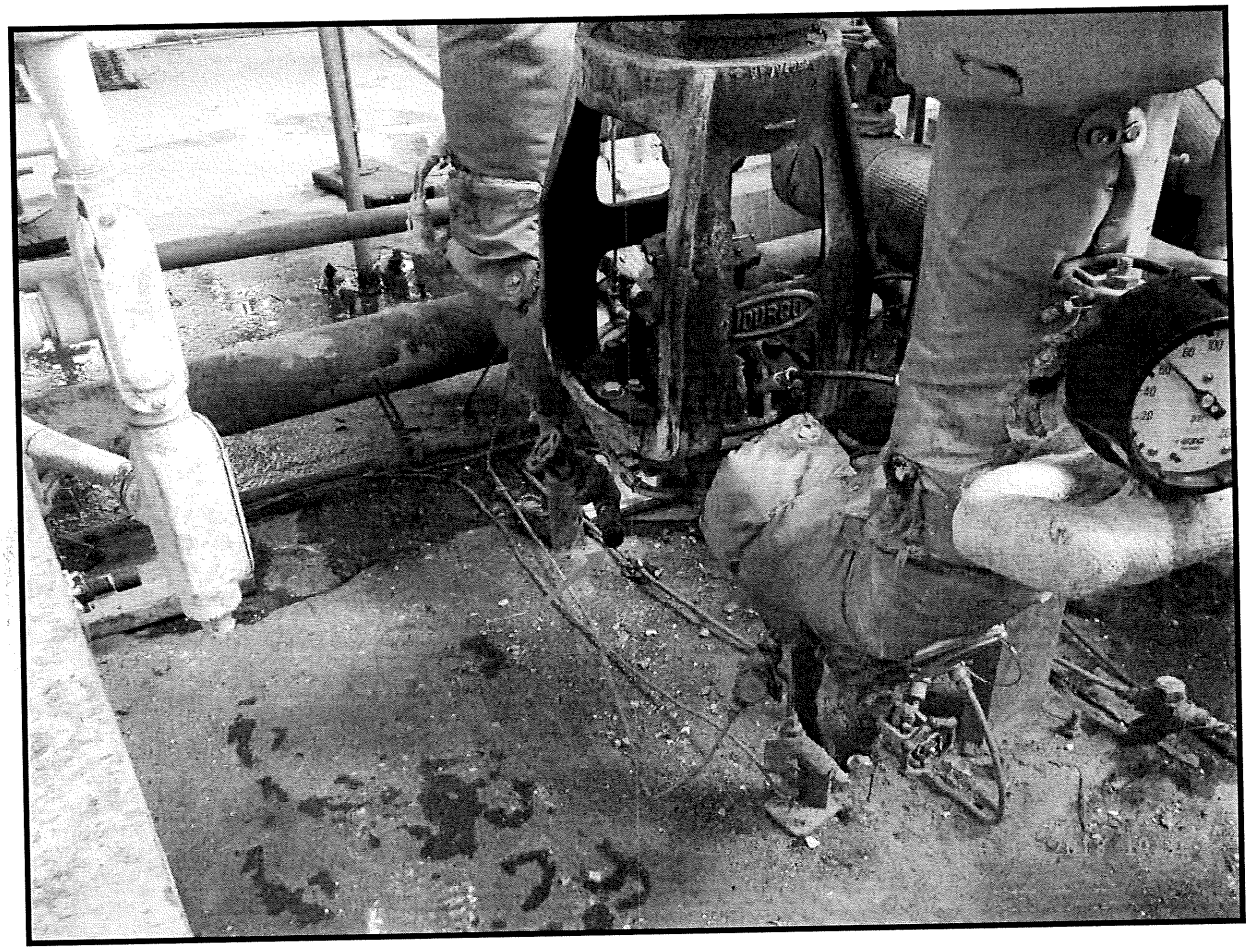


Photo I.D.: RIMG0152	**Photographer**: Jennifer Gibbs	**Date**: September 18, 2013	**Time**: 10:18 am
City/Parish: Plaquemine/Iberville		**Direction (facing)**: Downward	**State**: Louisiana
Location: Axiall Corporation			
Subject: View of suspected open-ended line (OEL) on phenol line. TVA didn't pick up any emissions. Upon further investigation, facility personnel were able to determine that the OEL was double-blocked and therefore not open-ended.			

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Official Photograph Log

Photo # 6

Photo I.D.: RIMG0153	**Photographer**: Jennifer Gibbs	**Date**: September 18, 2013	**Time**: 10:45 am
City/Parish: Plaquemine/Iberville		**Direction (facing)**: Downward	**State**: Louisiana
Location: Axiall Corporation			
Subject: View of process drain found to be leaking at 5,500 ppm, facility LDAR personnel confirmed the leak at 14,000 ppm.			

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Official Photograph Log

Photo # 7

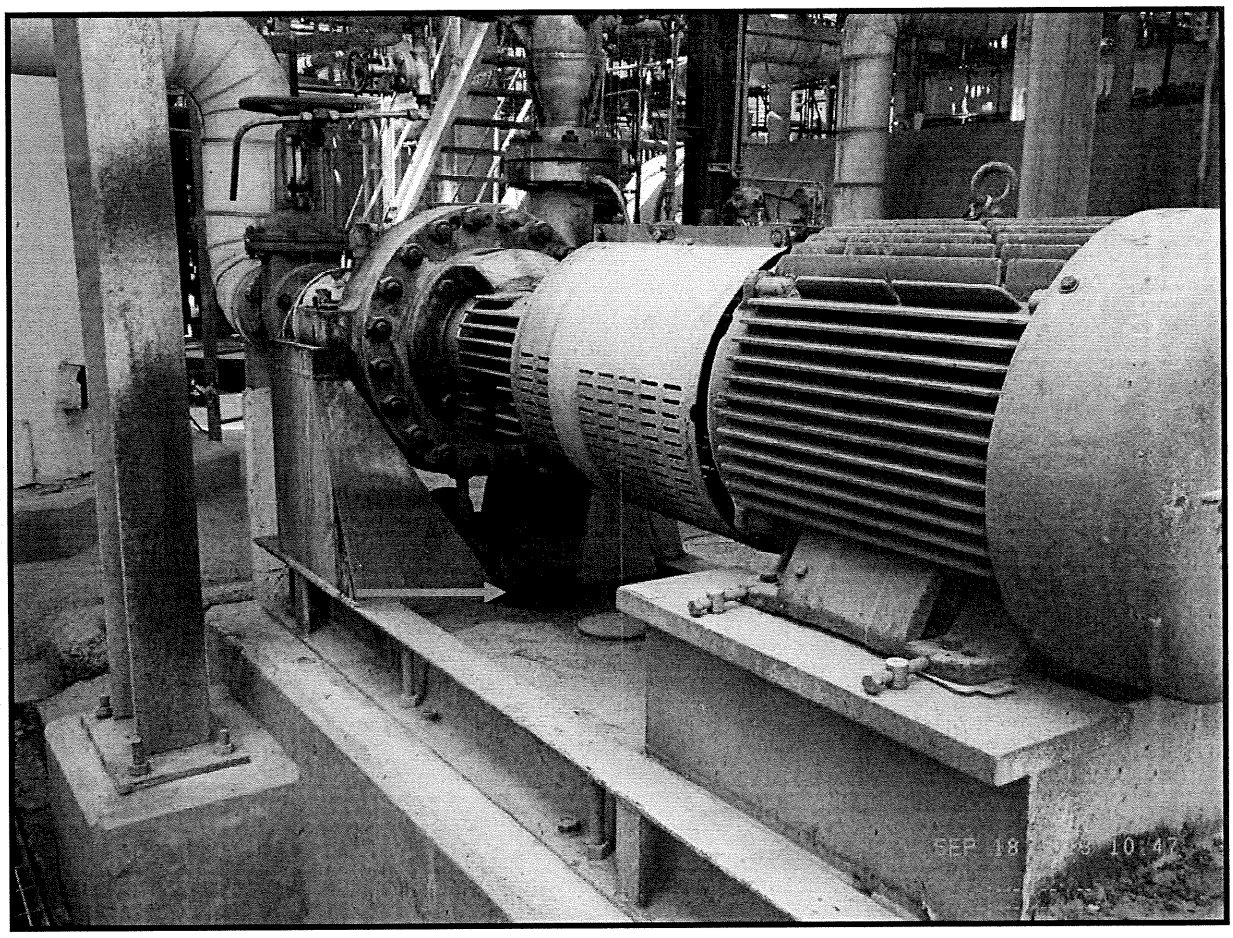


Photo I.D.: RIMG0154	**Photographer**: Jennifer Gibbs	**Date**: September 18, 2013	**Time**: 10:47 am
City/Parish: Plaquemine/Iberville		**Direction (facing)**: Southwest	**State**: Louisiana
Location: Axiall Corporation			
Subject: View of visible leak from pump 02-76134 which is attached to cleavage reactor tank 02-47014. According to facility personnel the material found under the pump was cleavage mix. No TVA or IR camera recordings were collected as this was a dried up heavy liquids leak.			

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Official Photograph Log

Photo # 8

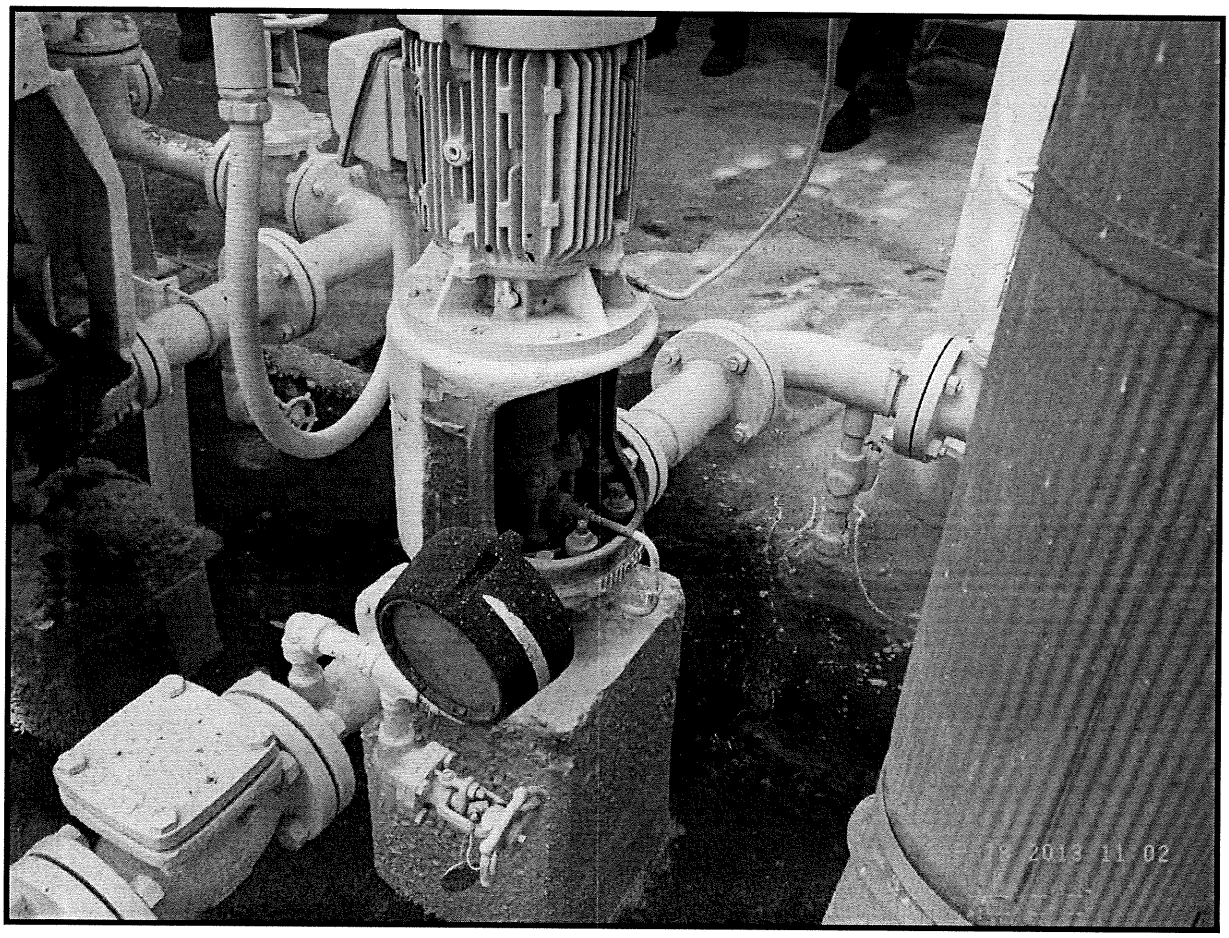


Photo I.D.: RIMG0155	**Photographer**: Jennifer Gibbs	**Date**: September 18, 2013	**Time**: 11:02 am
City/Parish: Plaquemine/Iberville		**Direction (facing)**: Downward	**State**: Louisiana
Location: Axiall Corporation			
Subject: View of pump 31073 leaking at 8,400 ppm and confirmed by facility LDAR personnel at 24,800 ppm. We observed a facility LDAR technician tag the pump as a leaker.			

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Official Photograph Log

Photo # 9

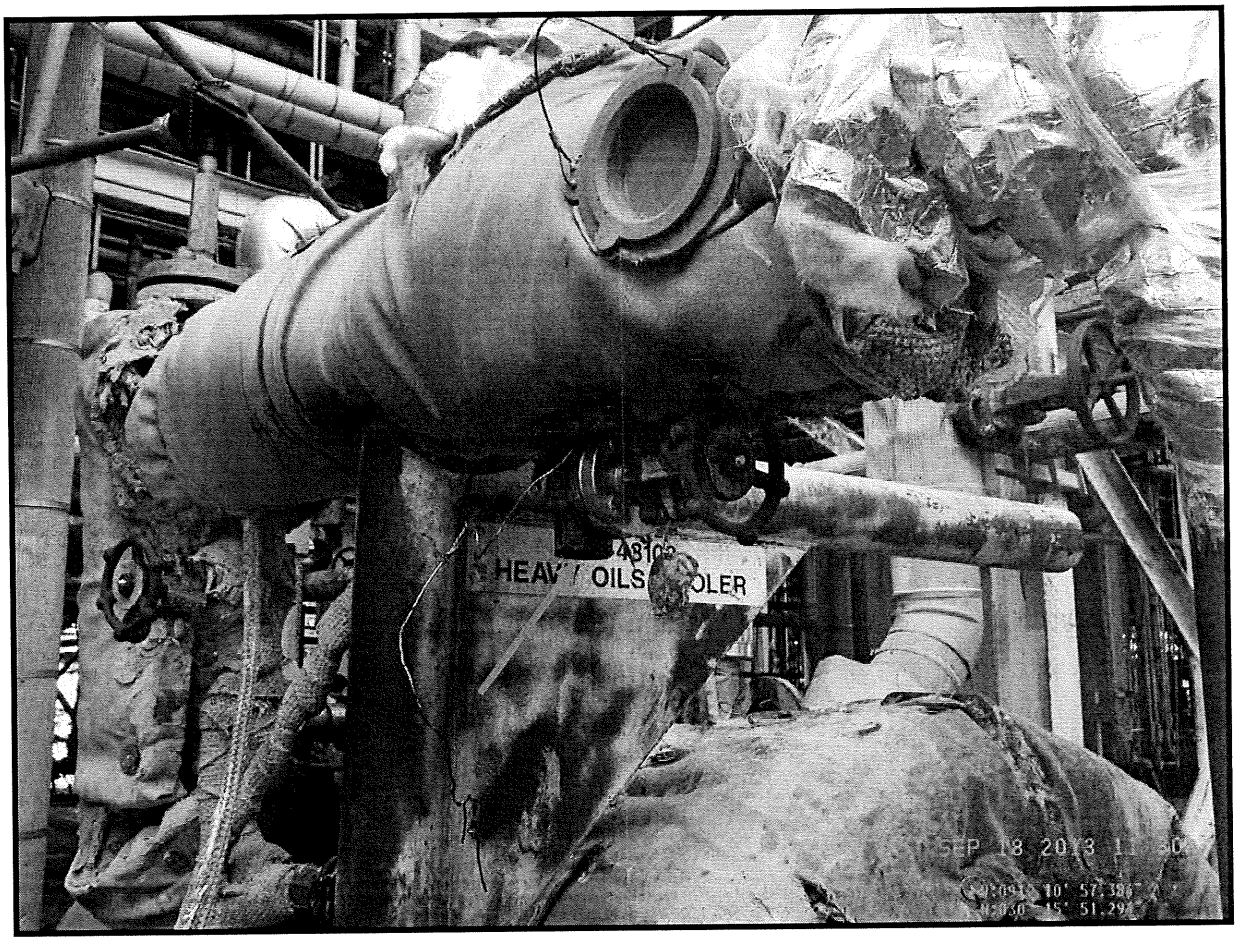


Photo I.D.: RIMG0156	**Photographer**: Jennifer Gibbs	**Date**: September 18, 2013	**Time**: 11:30 am
City/Parish: Plaquemine/Iberville		**Direction (facing)**: Downward	**State**: Louisiana
Location: Axiall Corporation			
Subject: View of OEL near LDAR tag 31639 and heavy oil cooker 02-43103. The TVA did not pick up any emissions from the OEL.			

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Official Photograph Log

Photo # 10

Photo I.D.: RIMG0157	**Photographer**: Jennifer Gibbs	**Date**: September 18, 2013	**Time**: 2:02 pm
City/Parish: Plaquemine/Iberville		**Direction (facing)**: North	**State**: Louisiana
Location: Axiall Corporation			
Subject: View of sample port leaking at 13,500 ppm and confirmed by facility LDAR personnel at 3,600 ppm near the heavy end tower reflux pump area. According to facility personnel, the sample ports are permitted. See Video 7.			

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Official Photograph Log

Photo # 11

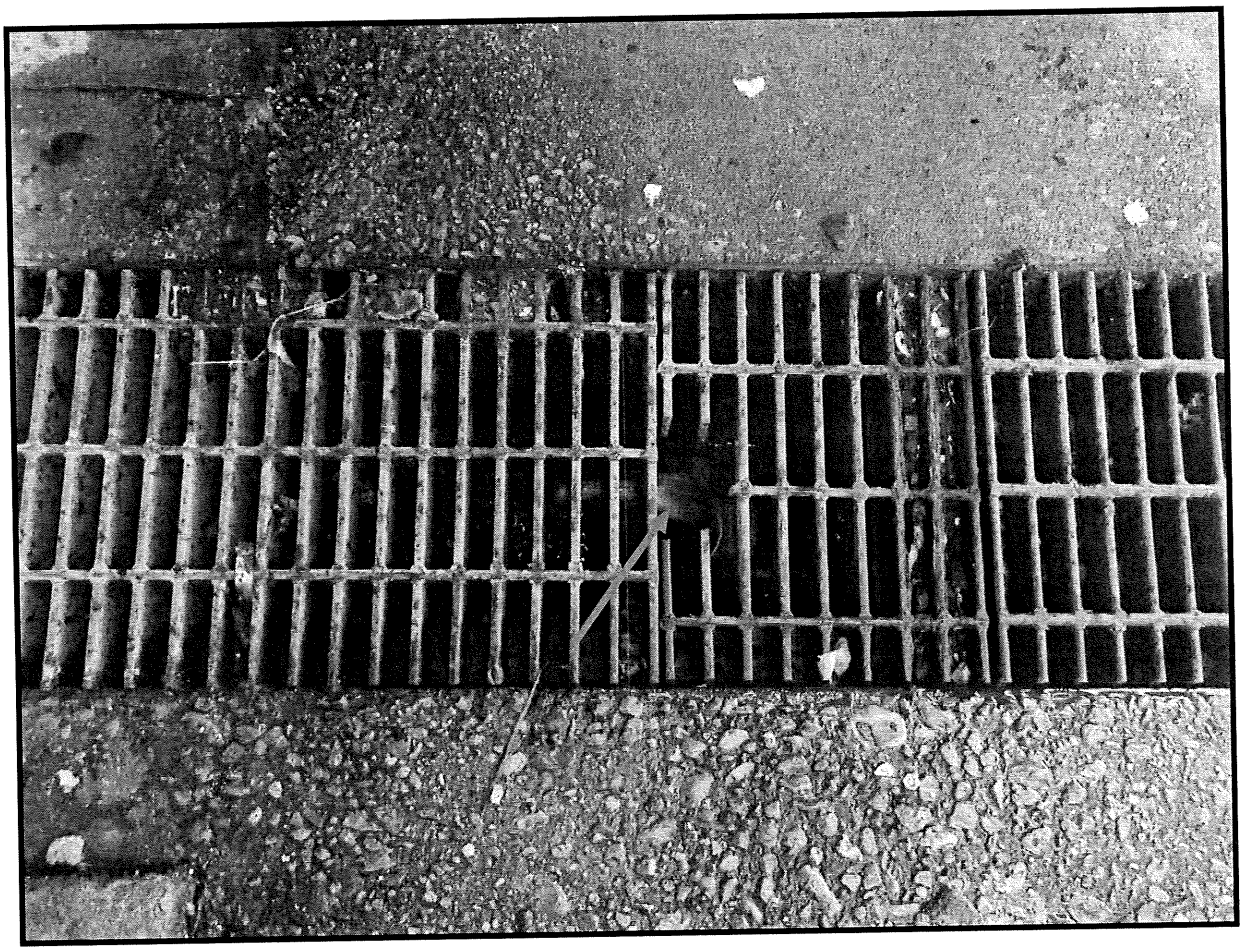


Photo I.D.: RIMG0158	**Photographer**: Jennifer Gibbs	**Date**: September 18, 2013	**Time**: 2:06 pm
City/Parish: Plaquemine/Iberville		**Direction (facing)**: Downward	**State**: Louisiana
Location: Axiall Corporation			
Subject: View of pipe under stormwater sump grate leaking at 30,000 ppm and confirmed by facility LDAR personnel at 45,000 ppm. The pipe was located near the heavy end tower reflux pump area and a phenol drainage drum. See Video 8.			

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Official Photograph Log

Photo # 12

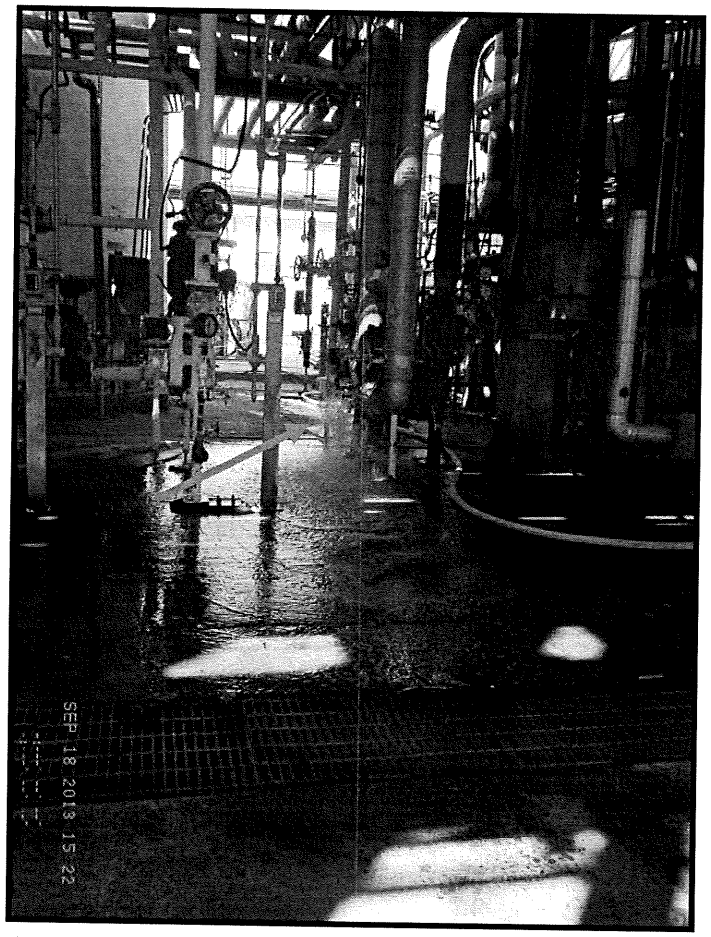


Photo I.D.: RIMG0159	**Photographer**: Jennifer Gibbs	**Date**: September 18, 2013	**Time**: 3:22 pm
City/Parish: Plaquemine/Iberville		**Direction (facing)**: Downward	**State**: Louisiana
Location: Axiall Corporation			
Subject: View of open valve discharging process wastewater to the surface (concrete) and draining to an open grate that ultimately drains to the wastewater treatment plant/bio treatment plant. There was a tag labeled work order 392644 in the area of the open valve. Readings of 100 to 200 ppm (with a TVA) were recorded by Ms. Crawford two to four inches above the water surface.			

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Official Photograph Log

Photo # 13

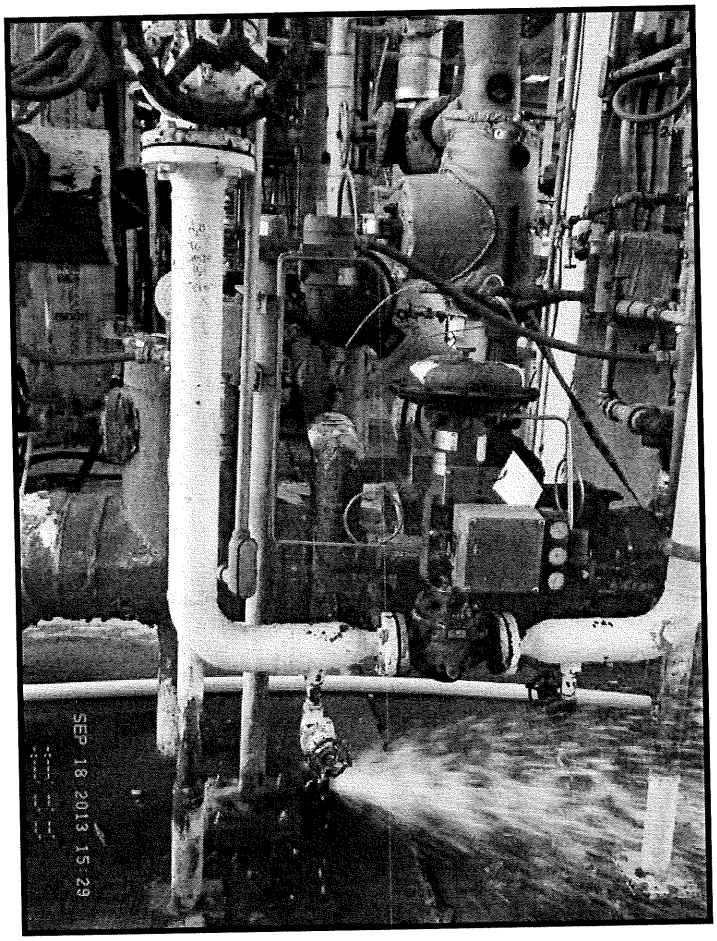


Photo I.D.: RIMG0160	**Photographer**: Jennifer Gibbs	**Date**: September 18, 2013	**Time**: 3:29 pm
City/Parish: Plaquemine/Iberville		**Direction (facing)**: Downward	**State**: Louisiana
Location: Axiall Corporation			
Subject: Close-up view of open valve discharging process wastewater to the surface (concrete). See photograph 12, above.			

APPENDIX 7

LEGEND: ' = Calculated time " = Time changed " = MB data % = Less than expected # samples

DATE/ TIME	TI2914 deg f TEMP	TI2915 deg f TEMP
	Destruction Temp	Exit Temp
09/17/13 14:30:00	636.3	611.8
14:31:00	635.6	612.6
14:32:00	637.2	611.8
14:33:00	638.1	614.2
14:34:00	635.9	614.3
14:35:00	634.4	612.6
14:36:00	636.5	611.6
14:37:00	638.7	611.8
14:38:00	640.4	612.6
14:39:00	640.2	613.3
14:40:00	636.7	613.3
14:41:00	635.7	610.9
14:42:00	638.0	610.8
14:43:00	637.9	611.5
14:44:00	638.2	612.4
14:45:00	638.7	612.0
14:46:00	638.7	612.3
14:47:00	637.6	612.2
14:48:00	636.7	609.4
14:49:00	635.9	606.7
14:50:00	636.7	605.7
14:51:00	639.8	606.9
14:52:00	639.5	607.9
14:53:00	638.1	608.2
14:54:00	638.2	607.2
14:55:00	637.3	607.3
14:56:00	638.0	607.3

LEGEND: ' = Calculated time " = Time changed " = HB data ¥ = Less than expected # samples

DATE/ TIME	TI2914 deg f TEMP	TI2915 deg f TEMP
09/17/13 14:59:00	638.0	607.1
15:00:00	636.3	607.1
15:01:00	634.6	606.3
15:02:00	637.0	605.3
15:03:00	636.8	606.8
15:04:00	638.3	607.1
15:05:00	638.7	607.1
15:06:00	639.0	607.1
15:07:00	638.6	606.9
15:08:00	637.0	606.2
15:09:00	637.4	605.3
15:10:00	637.8	606.1
15:11:00	638.6	606.1
15:12:00	637.8	606.0
15:13:00	637.8	606.0
15:14:00	638.6	606.1
15:15:00	637.7	606.0
15:16:00	638.6	606.0
15:17:00	640.3	606.9
15:18:00	639.4	608.6
15:19:00	637.0	607.9
15:20:00	636.8	606.2
15:21:00	636.6	606.2
15:22:00	638.5	606.9
15:23:00	638.5	608.0
15:24:00	637.1	608.0
15:25:00	634.4	607.2

LEGEND: = Calculated time ' = Time changed " = HG data % = Less than expected # samples

DATE/ TIME	TI2914 deg f TEMP	TI2915 deg f TEMP
09/17/13 15:28:00	636.2	605.5
15:29:00	637.1	607.6
15:30:00	635.4	608.0

JG-3

Snapshot Values/Averages
PVR

PV RETRIEVAL REQUEST

16:15 17 Sep 13
PAGE 1

LEGEND: ' = Calculated time " = Time changed " = HG data % = Less than expected # samples

DATE/ TIME	TI2914 deg f TEMP	TI2915 deg f TEMP
	Destruction Temp	Exit Temp.
09/17/13 14:30:00	636.3	611.8
14:31:00	635.6	612.6
14:32:00	637.2	611.8
14:33:00	638.1	614.2
14:34:00	635.9	614.3
14:35:00	634.4	612.6
14:36:00	636.5	611.6
14:37:00	638.7	611.8
14:38:00	640.4	612.6
14:39:00	640.2	613.3
14:40:00	636.7	613.3
14:41:00	635.7	610.9
14:42:00	638.0	610.8
14:43:00	637.9	611.5
14:44:00	638.2	612.4
14:45:00	638.7	612.0
14:46:00	638.7	612.3
14:47:00	637.6	612.2
14:48:00	636.7	609.4
14:49:00	635.9	606.7
14:50:00	636.7	605.7
14:51:00	639.8	606.9
14:52:00	639.5	607.9
14:53:00	638.1	608.2
14:54:00	638.2	607.2
14:55:00	637.3	607.3
14:56:00	638.0	607.3

14:58:00 638.1 607.2

Snapshot Values/Averages
PVR

PV RETRIEVAL REQUEST

16:15 17 Sep 13
PAGE 2

LEGEND: ' = Calculated time ~ = Time changed " = HG data % = Less than expected # samples

DATE/ TIME	TI2914 deg f TEMP	TI2915 deg f TEMP
09/17/13		
14:59:00	638.0	607.1
15:00:00	636.3	607.1
15:01:00	634.6	606.3
15:02:00	637.0	605.3
15:03:00	636.8	606.8
15:04:00	638.3	607.1
15:05:00	638.7	607.1
15:06:00	639.0	607.1
15:07:00	638.6	606.9
15:08:00	637.0	606.2
15:09:00	637.4	605.3
15:10:00	637.8	606.1
15:11:00	638.6	606.1
15:12:00	637.8	606.0
15:13:00	637.8	606.0
15:14:00	638.6	606.1
15:15:00	637.7	606.0
15:16:00	638.6	606.0
15:17:00	640.3 ~	606.9
15:18:00	639.4	608.6
15:19:00	637.0	607.9
15:20:00	636.8	606.2
15:21:00	636.6	606.2
15:22:00	638.5	606.9
15:23:00	638.5	608.0
15:24:00	637.1	608.0
15:25:00	634.4	607.2

APPENDIX 8

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY – REGION 6
1445 ROSS AVENUE, DALLAS, TX 75202

EPA REFERENCE METHOD 21 CALIBRATION FORM

CALIBRATION DATE:	9/17/13
INSTRUMENT TYPE:	TVA1000B
SERIAL NUMBER:	0523112930
CALIBRATOR(S):	C. Lutz & G. Valentine

CERTIFIED CALIBRATION GASES

CONCENTRATION	EXPIRATION DATE	CYLINDER LOT NO.	CYLINDER PSI
Zero - 0 ppm	6/2016	952945	~~950~~ cv 900
Methane - 500 ppm	9/2015	948883	~~750~~ cv. 825
Methane – 9,500 ppm	6/2016	958631	~~850~~ cv. 825

INITIAL CALIBRATION

TIME	GAS TYPE	CONCENTRATION (PPMa)	READING (PPMc)	% DEVIATION	ACCEPTABLE CALIBRATION?
1:00p	Zero	0	0	0 %	(Y) N
1:00p	Methane	500	496	0.8 %	(Y) N
1:00p	Methane	9,500	9,495	0.05%	(Y) N

% Deviation = $\frac{(PPMc - PPMa)}{PPMa)} \times 100$

MID-DAY CALIBRATION/DRIFT CHECK

TIME	GAS TYPE	CONCENTRATION (PPMa)	READING (PPMc)	% DEVIATION	ACCEPTABLE CALIBRATION?
	Zero	0			Y N
	Methane	500			Y N
	Methane	9,500			Y N

END-OF-DAY CALIBRATION/DRIFT CHECK

TIME	GAS TYPE	CONCENTRATION (PPMa)	READING (PPMc)	% DEVIATION	ACCEPTABLE CALIBRATION?
	Zero	0			Y N
	Methane	500			Y N
	Methane	9,500			Y N

Calibration Gas: Need to Order? Y or (N) **GAS TYPE?**_____

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY – REGION 6
1445 ROSS AVENUE, DALLAS, TX 75202

EPA REFERENCE METHOD 21 CALIBRATION FORM

CALIBRATION DATE:	9/18/13
INSTRUMENT TYPE:	TVA 1000B
SERIAL NUMBER:	0523112930
CALIBRATOR(S):	C Lutz & G Valentine

CERTIFIED CALIBRATION GASES

CONCENTRATION	EXPIRATION DATE	CYLINDER LOT NO.	CYLINDER PSI
Zero - 0 ppm	6/2016	952945	900
Methane - 500 ppm	9/2015	948883	825
Methane – 9,500 ppm	6/2016	958631	825

INITIAL CALIBRATION

TIME	GAS TYPE	CONCENTRATION (PPMa)	READING (PPMc)	% DEVIATION	ACCEPTABLE CALIBRATION?
8:10A	Zero	0	0.12	0.12%	(Y) N
8:15A	Methane	500	512	2.4%	(Y) N
8:15A	Methane	9,500	10,070	6.0%	(Y) N

% Deviation = (PPMc – PPMa) X 100
PPMa)

MID-DAY CALIBRATION/DRIFT CHECK

TIME	GAS TYPE	CONCENTRATION (PPMa)	READING (PPMc)	% DEVIATION	ACCEPTABLE CALIBRATION?
1:15P	Zero	0	1.12	1.12%	(Y) N
1:15P	Methane	500	540	8%	(Y) N
1:15P	Methane	9,500	10,100	6.32%	(Y) N

END-OF-DAY CALIBRATION/DRIFT CHECK

TIME	GAS TYPE	CONCENTRATION (PPMa)	READING (PPMc)	% DEVIATION	ACCEPTABLE CALIBRATION?
	Zero	0			Y N
	Methane	500			Y N
	Methane	9,500			Y N

Calibration Gas: Need to Order? Y or (N) **GAS TYPE?**_____

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY – REGION 6
1445 ROSS AVENUE, DALLAS, TX 75202

EPA REFERENCE METHOD 21 CALIBRATION FORM

CALIBRATION DATE:	9/19/03
INSTRUMENT TYPE:	TVA1000B
SERIAL NUMBER:	0523112930
CALIBRATOR(S):	C Lute & G. Valentine

CERTIFIED CALIBRATION GASES

CONCENTRATION	EXPIRATION DATE	CYLINDER LOT NO.	CYLINDER PSI
Zero - 0 ppm	6/2016	952945	900
Methane - 500 ppm	9/2015	948883	825
Methane – 9,500 ppm	6/2016	959631	825

INITIAL CALIBRATION

TIME	GAS TYPE	CONCENTRATION (PPMa)	READING (PPMc)	% DEVIATION	ACCEPTABLE CALIBRATION?
7:55A	Zero	0	0	0	(Y) N
7:55A	Methane	500	496	0.8%	(Y) N
7:55A	Methane	9,500	9,497	0.03%	(Y) N

% Deviation = $\frac{(PPMc - PPMa)}{PPMa)} \times 100$

MID-DAY CALIBRATION/DRIFT CHECK

TIME	GAS TYPE	CONCENTRATION (PPMa)	READING (PPMc)	% DEVIATION	ACCEPTABLE CALIBRATION?
	Zero	0	0 C.V.		Y N
	Methane	500			Y N
	Methane	9,500			Y N

END-OF-DAY CALIBRATION/DRIFT CHECK

TIME	GAS TYPE	CONCENTRATION (PPMa)	READING (PPMc)	% DEVIATION	ACCEPTABLE CALIBRATION?
	Zero	0			Y N
	Methane	500			Y N
	Methane	9,500			Y N

Calibration Gas: Need to Order? Y or (N) GAS TYPE?_____

APPENDIX 9

JG-4
9/18/13

- Axiall 9/19/13
  - Exit Interview

Name	Representation	Email	Num
Dorothy Crawford	US EPA Dallas	crawford.dorothy@epa.gov	2146652771
Jennifer Gibbs	US EPA Region 6	gibbs.jennifer@epa.gov	2146657347
Craig Lutz	USEPA Region 6	lutz.craig@epa.gov	2146652190
Greg Valentine	USEPA Region 6	valentine.greg@epa.gov	(214)665-3111
Cory Lormand	LDEQ	cory.lormand@la.gov	(225)219-3040
Dave Goldsmith	Axiall	dave.goldsmith@axiall.com	225 685-267
Katie Roberson	Axiall	katie.roberson@axiall.com	(225) 685-2644
Hillary Garner	Axiall	hillary.garner@axiall.com	(225)685-2632
Joseph Daigneault	Axiall	joseph.daigneault@axiall.com	(225) 685-267
Kevin Spargo	Axiall	kevin.spargo@axiall.com	(225)685-2594
Ryan Landry	SGS	Ryan.Landry@axiall.com	(225)685-2610
Tommy Gleason	Axiall	Tommy.Gleason@Axiall.com	(225)685-269
Rodney Gremillion	Axiall	rodney.gremillion@axiall.com	225-685-25
James Demand	Axiall	jim.demand@axiall.com	(225)685-2547
Michael Toinee	Axiall	Michael.Toinee@Axiall.com	225-685-2528
Kerry Cook	Axiall	kerry.cook@axiall.com	(225) 685-2924
Gerry Brooks	Axiall	Gerry.Brooks@Axiall.com	(225) 685-282

IN THE UNITED STATES DISTRICT COURT
FOR THE SOUTHERN DISTRICT OF TEXAS
VICTORIA DIVISION

UNITED STATES OF AMERICA, Plaintiff, v. Formosa Plastics Corporation, Texas, Formosa Plastics Corporation, Louisiana, Formosa Hydrocarbons, Inc., Defendants.	)	Civil Action No. 6:09-cv-00061

FIRST AMENDMENT TO CONSENT DECREE

FIRST AMENDMENT TO CONSENT DECREE

WHEREAS on September 29, 2009, Plaintiff the United States of America ("United States"), on behalf of the Environmental Protection Agency ("EPA"), filed a complaint in this action and contemporaneously lodged a Consent Decree between the United States and Defendants Formosa Plastics Corporation, Texas, Formosa Plastics Corporation, Louisiana, and Formosa Hydrocarbons Corporation;

WHEREAS on February 3, 2010, this Court entered the Consent Decree ("Consent Decree") that fully resolved the claims in the complaint;

WHEREAS the Consent Decree, *inter alia*, requires Formosa Plastics Corporation, Texas, and Formosa Hydrocarbons Corporation (collectively "FPC TX") to perform enhancements to the leak detection and repair ("LDAR") programs at their two facilities in Point Comfort, Texas ("Point Comfort Facilities");

WHEREAS, in 2011, pursuant to the reporting requirements of the Consent Decree, FPC TX notified EPA that FPC TX had failed to include in its LDAR program pieces of equipment from a section of the hydrocarbons process unit that should have been included under applicable regulations;

WHEREAS the Point Comfort Facilities have in excess of 400,000 pieces of LDAR-regulated equipment;

WHEREAS prior to the Lodging of this First Amendment, FPC TX developed a Scope of Work that is attached as Appendix G to this First Amendment;

WHEREAS, FPC TX developed this Scope of Work in order to retain a Third-Party LDAR contractor (different from its current LDAR services provider) to undertake a comprehensive review of the piping and instrumentation drawings ("P&IDs") of each process

unit covered by Appendix A of the Consent Decree for the Point Comfort Facilities ("Covered Process Units") and to perform a field verification of the P&IDs and the LDAR database of each Covered Process Unit in order to review the "in service" determination (*i.e.*, " in Volatile Organic Compound ("VOC") service" and/or "in Hazardous Air Pollutant ("HAP") service") of each line and to ensure that all components that are required to be included in the Point Comfort Facilities' LDAR Program are included and all components that are not required to be included are removed from the LDAR database;

WHEREAS the overall process identified in the preceding WHEREAS clause is termed the "Comprehensive First Amendment LDAR Evaluation" and, as described in Appendix G, is intended to be much more detailed and comprehensive than an audit;

WHEREAS the United States and FPC TX (the "Parties to the First Amendment") recognize, and the Court by entering this First Amendment finds, that this First Amendment has been negotiated at arm's length and in good faith, that it will avoid litigation between the Parties to the First Amendment, and that this First Amendment is fair, reasonable, and in the public interest;

NOW, THEREFORE, before the taking of any testimony, without the adjudication or admission of any issue of fact or law, and upon the consent and agreement of the Parties, it is hereby ADJUDGED, ORDERED, and DECREED as follows:

* * * *

1. The Consent Decree shall remain in full force and effect in accordance with its terms except that the new Definitions identified below in Paragraph 2 are added to Appendix A of the Consent Decree; the new Paragraphs numbered 37–40 below are added to Appendix A of

the Consent Decree; the new Paragraphs numbered 30A, 32A, 61A, and 61B below are added to the body of the Consent Decree; and new Appendices G and H, attached hereto, are added.

* * * *

DEFINITIONS TO BE ADDED TO APPENDIX A

2. The definitions in Appendix A are amended with respect to the Point Comfort Facilities to include the definitions set forth in the newly added Appendix G. These new definitions are found in both the "Definitions" section of Appendix G and in other locations in Appendix G.

* * * *

ADDITIONAL INJUNCTIVE RELIEF TO BE ADDED TO APPENDIX A

3. Appendix A is amended to add a new Subsection N which shall have the heading "**Subsection N (Additional Injunctive Relief)**." The following Paragraphs are added under that new Subsection:

"37. Comprehensive First Amendment LDAR Evaluation. FPC TX shall implement the Scope of Work set forth in Appendix G at the Point Comfort Facilities. FPC TX shall perform the actions in Appendix G that are assigned to it, shall use its Current LDAR Service Provider to perform the actions required by the Current LDAR Service Provider, and shall retain a Third-Party to perform the actions required by the Third-Party. FPC TX shall be solely responsible for ensuring that the work in Appendix G that must be performed by it, by its Current LDAR Service Provider and the Third-Party is undertaken consistent with Appendix G and in accordance with the schedule set forth in Paragraph 38.

"38. Schedule for Undertaking the Comprehensive First Amendment LDAR Evaluation.

a. Commencement. By no later than 60 days after the Date of Lodging of this First Amendment, FPC TX shall commence implementation of the Comprehensive First Amendment LDAR Evaluation set forth in Appendix G.

b. Completion. FPC TX shall perform the work required at each Covered Process Unit ("Covered Process Unit Evaluation") at the Point Comfort Facilities during the course of the Comprehensive First Amendment LDAR Evaluation with the goal of being comprehensive and thorough. With that goal in mind, FPC TX shall complete the

Comprehensive First Amendment LDAR Evaluation by no later than one year and 60 days after the Date of Lodging, unless, by no later than one year and 15 days after the Date of Lodging, FPC TX seeks approval from EPA Region 6 for an extension of the deadline. In seeking an extension, FPC TX shall provide specific and detailed reasons justifying the additional time. Unexpected costs shall not be a reason for seeking additional time. The request for an extension of time in this Subparagraph is distinct from a request under the *force majeure* provisions (Section VIII) of the Decree. Nothing in this Subparagraph prevents FPC TX from invoking *force majeure*, if applicable, for an extension of the deadline.

"39. Reports. Consistent with Step 6.2 in Appendix G, by no later than two weeks after completing each Covered Process Unit Evaluation, FPC TX shall submit a report to EPA Region 6 by certified mail that identifies, by Equipment type (*i.e.,* valve, connector, *etc.*), the number of pieces of Equipment within the Covered Process Unit that have been added to the LDAR program and the number that have been removed. This report shall be called the "Paragraph 39 Report" and each Paragraph 39 Report expressly shall identify that it is being submitted pursuant to Paragraph 39 of Appendix A of the First Amendment. Equipment that has been listed in a Paragraph 39 Report as having been added to the LDAR program will be subject to the stipulated penalties in Subparagraph 32A.b of this First Amendment.

"40. Certification. By signing this First Amendment, FPC TX certifies that, as of the date of its signature, and other than Equipment that FPC TX already has notified EPA of, it has no knowledge of any piece of Equipment at the Point Comfort Facilities that should be or should have been included in the LDAR Program but currently is not included. If, between the date of its signature and the Date Lodging of this First Amendment, FPC TX becomes aware of any piece of Equipment that should be or should have been included in its LDAR Program but is currently not included, FPC TX shall notify EPA Region 6 by electronic mail as soon as it has any such knowledge. Electronic notice shall be sent to moncrieffe.marcia@epa.gov and gibbs.jennifer@epa.gov. "

* * * *

STIPULATED PENALTIES

4. A new Paragraph is added in Section VII of the body of the Consent Decree as follows:

"30A. By no later than thirty (30) days after Entry of this First Amendment, FPC TX shall pay a penalty of $1,447,925 (One Million, Four-Hundred, Forty-Seven Thousand, Nine-Hundred and Twenty Five Dollars) to the United States in consideration of the resolution of liability set forth in Paragraph 61.A of this First Amendment. Payment shall be made as directed in Paragraph 9 of the Consent Decree."

5. New stipulated penalties are added to the first table in Paragraph 32 (*i.e.*, the table for "Noncompliance with Requirements of Enhanced Leak Detection and Repair Program (Appendix A)") as follows:

"32A. FPC TX shall be liable for stipulated penalties to the United States for the violations of this First Amendment set forth below.

Violation	**Stipulated Penalty**	
32A.a. For failure to timely complete the Comprehensive First Amendment LDAR Evaluation in accordance with the terms of Paragraph 37 of this First Amendment and Appendix G	Period of Delay Days 1 – 30 Days 31 – 60 Over 60 days	Penalty per Day $ 1000 $ 2000 $ 3000
32A.b. For each piece of Equipment that is listed in a Paragraph 39 Report that FPC TX failed to include in its LDAR Program that should have been included. (This penalty is in lieu of the stipulated penalties found in the final two rows of the stipulated penalty table on pages 13–16 of the main body of the Decree that is associated with "Noncompliance with Requirements of Enhanced Leak Detection and Repair Program (Appendix A)." The final two rows in question are located on page 16. For any pieces of Equipment other than those listed in a Paragraph 39 Report, the final two rows of the Table remain in full force and effect.)	$175 per piece of missed Equipment"	

* * * *

6. Two new paragraphs are added after Paragraph 61 in the body of the Consent Decree as follows:

"61A. Resolution of Liability. This First Amendment resolves the civil and stipulated penalty claims of the United States for the violations alleged against FPC TX in an EPA letter dated March 23, 2012, and for the violations reported by FPC TX to EPA in an April 5, 2012 letter. EPA's March 23, 2012 letter, the letters from FPC TX to EPA that EPA refers to in its March 23, 2012 letter, and FPC TX's April 5, 2012 letter are set forth in Appendix H of this First Amendment.

"61B. All references in the Consent Decree to Paragraph 61 shall be interpreted to include reference to Paragraph 61A."

SO ORDERED this 13th day of March 2013.

United States District Judge

Signature Page to First Amendment to Consent Decree in *U.S. v. Formosa Plastics Corporation, Texas, et al.*

Through its undersigned representatives, the party below consents to entry of the First Amendment to the Consent Decree, subject to the public notice and comment provisions of 28 C.F.R. § 50.7.

FOR THE UNITED STATES OF AMERICA

/s/ Ignacia S. Moreno
IGNACIA S. MORENO
Assistant Attorney General
Environment and Natural Resources Division
United States Department of Justice

/s/ Annette M. Lang
ANNETTE M. LANG
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KENNETH MAGIDSON
United States Attorney
Southern District of Texas

By: /s/ Daniel Hu
DANIEL HU
Assistant United States Attorney
Southern District of Texas
Bar Nos: Texas: 10131415
S.D. Texas: 7959
P.O. Box 61129
919 Milam St.
Houston, TX 77208
daniel.hu@usdoj.gov

Signature Page to First Amendment to Consent Decree in *U.S. v. Formosa Plastics Corporation, Texas, et al.*

Through its undersigned representatives, the party below consents to entry of the First Amendment to the Consent Decree, subject to the public notice and comment provisions of 28 C.F.R. § 50.7.

FOR THE U.S. ENVIRONMENTAL PROTECTION AGENCY

/s/ Cynthia Giles***
CYNTHIA GILES
Assistant Administrator
Office of Enforcement and Compliance Assurance
United States Environmental Protection Agency
Washington, DC

*** Signed with permission.

Signature Page to First Amendment to Consent Decree in *U.S. v. Formosa Plastics Corporation, Texas, et al.*

Through its undersigned representatives, the party below consents to entry of the First Amendment to the Consent Decree, subject to the public notice and comment provisions of 28 C.F.R. § 50.7.

FOR THE U.S. ENVIRONMENTAL PROTECTION AGENCY REGION 6

/s/ John Blevins ***
JOHN BLEVINS
Director
Compliance Assurance and
Enforcement Division

/s/ Marcia Elizabeth Moncrieffe ***
MARCIA ELIZABETH MONCRIEFFE
Assistant Regional Counsel
United States Environmental Protection Agency
Region 6
1445 Ross Ave, Suite 1200
Dallas, Texas 75202

*** Signed with permission.

Signature Page to First Amendment to Consent Decree in *U.S. v. Formosa Plastics Corporation, Texas, et al.*

Through its undersigned representative, the parties below consent to entry of the First Amendment to the Consent Decree.

FORMOSA PLASTICS CORPORATION, TEXAS,
FORMOSA HYDROCARBONS CORPORATION

/s/ Randall P. Smith ***
RANDALL P. SMITH
Vice President/General Manager
Formosa Plastics Corporation, Texas
Point Comfort, Texas

November 29, 2012
DATE

*** Signed with permission.

EXHIBIT G

Scope of Work to Perform FPC TX's Comprehensive First Amendment LDAR Evaluation

Overall Process: The overall process required by this Scope of Work shall be referred to as the "Comprehensive First Amendment LDAR Evaluation." As applied to a single "Covered Process Unit" (defined below), the process shall be referred to as the "Covered Process Unit Evaluation."

The Third-Party shall evaluate all piping and instrumentation diagrams ("P&IDs") from each Covered Process Unit at the Point Comfort, Texas facilities of Formosa Plastics Corporation, Texas, and Formosa Hydrocarbons Corporation (collectively FPC TX) to verify determinations of "in VOC service" or "not in VOC service" and/or "in organic HAP service" or "not in organic HAP service" as defined in applicable LDAR regulations.

The Third-Party also shall perform field verifications of the P&IDs and FPC TX's database by doing unit-by-unit walk-throughs to ensure that the P&IDs and current LDAR database accurately reflect the components in the field and that the components in the field accurately are reflected on the P&IDs and in the LDAR database. Any component that is in VOC service or in HAP service, as applicable, but not currently in the LDAR program will be added to the LDAR program. Any component that is in the LDAR program but should not be will be removed from the LDAR program.

By no later than two weeks after completion of the Covered Process Unit Evaluation for each Covered Process Unit, FPC TX shall send a report to EPA by certified mail describing the results of the evaluation. "Completion of the Covered Process Unit Evaluation" shall mean when Actions 1 through 5 (below) are complete for that Covered Process Unit. After addition to the LDAR program, such components will be first monitored during the next required periodic monitoring for that type of component in that service.

Purpose of the P&ID Review: The P&ID review portion of the Comprehensive First Amendment LDAR Evaluation Program has been developed in order to systematically challenge and evaluate FPC TX's affected LDAR Equipment determinations beyond:

- FPC TX's 2010 LDAR retagging effort, which relied on previously made historic determinations; and,
- The scope of a FPC TX's recent LDAR Audits, which were performed by looking at a statistically random sampling of compliance requirements, assessing compliance based on a "snap shot" approach, and generally not challenging previous, historic determinations made by Operational personnel regarding the regulatory status of Equipment.

Covered Process Units:

The FPC TX process units covered by this Scope of Work are the same as those in a February 2010 Consent Decree between FPC TX and the United States and are:

1. PP II
2. LLDPE
3. VCM
4. PVC
5. EDC

6. FHC
7. OL II
8. HDPE II
9. PP I
10. EG
11. OL I / PPU / GHU
12. Inland Traffic
13. Marine Traffic
14. HDPE I

Definitions:

"Current LDAR Service Provider" shall mean the firm or company that FPC TX uses for the duration of the work outlined in this Scope of Work to undertake routine, required LDAR functions (including but not limited to monitoring, database entry, instrument calibration, etc), at the Point Comfort, Texas facilities of FPC TX.

"Equipment":

For PEI, PEII, LLDPE, and PPII, affected "Equipment" shall include the following, as defined in Part 63 Subpart UU and as allowed by 63.2535(k): "Each pump, compressor, agitator, pressure relief device, sampling connection system, open-ended valve or line, valve, connector, and instrumentation system in regulated material service" (i.e., in HAP or in VOC service).

For VCM, EDC, GHU, EG, Marine Traffic, and affected parts of Inland Traffic, affected "Equipment" shall include the following, as defined in Part 63 Subpart H: "Each pump, compressor, agitator, pressure relief device, sampling connection system, open-ended valve or line, valve, connector, surge control vessel, bottoms receiver, and instrumentation system in organic hazardous air pollutant service..."

For the affected parts of OLI and OLII, affected "Equipment" shall include the following, as defined in Part 63 Subpart YY: "Each pump, compressor, agitator, pressure relief device, sampling collection system, open-ended valve or line, valve, connector, instrumentation system in organic hazardous air pollutant service..."

For the affected parts of PVC, affected "Equipment" shall include the following, as defined in Part 63 Subpart EEEE: "Each pump, valve, and sampling connection system used in organic liquids service at an OLD operation. Valve types include control, globe, gate, plug, and ball. Relief and check valves are excluded."

For the PVC Unit, affected "Equipment" shall include the following, as defined in Part 61 Subpart V: "Each pump, compressor, pressure relief device, sampling connection system, open-ended valve or line, valve, connector, surge control vessel, bottoms receiver in VHAP service..."

For PPI, PPU, FHC, and the affected parts of OLI and OLII, affected "Equipment" shall include the following, as defined in Part 60 Subpart VV: "Each pump, compressor, pressure relief device, sampling connection system, open-ended valve or line, valve, and flange or other connector in VOC service..."

"Third-Party" shall mean the company or firm retained by FHC TX to undertake the work required in Actions 2–4 below.

Actions Necessary to Perform the Comprehensive First Amendment LDAR Evaluation for Each Covered Process Unit

Action #1: FPC TX's Pre-Evaluation Assembly - FPC TX Operations shall assemble the following in preparation for each Covered Process Unit Evaluation (Third-Party does not have to perform these actions):

Step 1.1: Assemble all current color-coded P&IDs associated with the Covered Process Unit, including but not limited to those generated during the 2010 retagging effort. Ensure that the P&IDs are current by reviewing them alongside any process and/or equipment changes since the 2010 retagging effort, using MOC support. Update the color codes on each P&ID as necessary. (Hereafter, these updated, color-coded P&IDs shall be referred to as the "FPC TX First Amendment LDAR P&IDs.")

Step 1.2: Gather operational data for the speciation of fluids (liquid or gas) contained within or in contact with the affected Equipment, including support for a determination of whether the fluid is potentially equal to or less than 5% wt. HAP or 10% wt VOC.

Step 1.3: Assemble Equipment-specific process descriptions and CAA regulatory applicability, including any regulatory overlaps, into a regulatory matrix.

Action #2: Third-Party P&ID Review

Step 2.1: Review Operations' regulatory matrix from Step 1.3 to ensure it is current and accurate (to the extent possible at this Step).

Step 2.2: Using the FPC TX First Amendment LDAR P&IDs from Step 1.1 and the operational data from Step 1.2, review and confirm the regulatory status of each process stream (*e.g.*, "In VOC service," "In HAP service," "exempt," "nonregulated") in preparation for field verification. Make all necessary changes to reflect the confirmed regulatory status on the FPC TX First Amendment LDAR P&IDs. (Hereafter, both the FPC TX First Amendment LDAR P&IDs that the third-party does *not* need to revise and those that it *does* need to revise shall collectively be called the "3P First Amendment LDAR P&IDs.")

Step 2.3: Using the 3P First Amendment LDAR P&IDs from Step 2.2, review each P&ID to ensure the P&ID matches the regulatory matrix, including the regulatory status of each line (i.e., process stream). Make all necessary changes to the regulatory matrix.

Action #3: Third-Party Field Verification Process: P&IDs and LDAR Database (dB)

Step 3.1: Third-Party shall confirm the P&ID page number for each component in the LDAR dB.

Step 3.2: Third-Party teams (two people each) shall use the 3P First Amendment LDAR P&IDs from Step 2.2 to field verify affected Equipment. "Field verify" includes:

a) Compare 3P First Amendment LDAR P&IDs to what is in the field;

b) Compare what is in field to 3P First Amendment LDAR P&IDs; and,
c) Compare a) and b) to what is represented in LDAR dB.

Step 3.3: On a daily basis, Third-Party shall identify and summarize data conflicts into initial determinations (e.g., add or remove affected equipment to/from the LDAR dB; update 3P First Amendment LDAR P&IDs, etc.).

Action #4: Third-Party & FPC TX: Review Initial Evaluation Findings, Make Final Determinations and Hold Progress Meetings

Step 4.1: On at least a weekly basis, in a meeting with FPC TX Operations and LDAR Coordinator, Third-Party shall review data conflicts from Step 3.3 and then finalize determinations. All necessary changes to the 3P First Amendment LDAR P&IDs, and regulatory matrix shall be made by the Third Party and all the necessary changes to the LDAR dB shall be made by the Current LDAR Services Provider, including adding new components and removing components that no longer are in service.

Step 4.2: Third-Party shall meet with FPC TX LDAR Coordinator at least every other week to discuss progress and schedule.

Action #5: If necessary: FPC TX or Current LDAR Services Provider Prepare dB/Log Sheet and Install LDAR Identification Tags for any New Components Found; Get New Components into LDAR Database for Monitoring

Step 5.1: FPC TX or its Current LDAR Services Provider shall populate a database/log sheet for each piece of affected Equipment that needs to be added to the LDAR dB. Data elements necessary for finding and monitoring regulated components include but are not limited to (Third-Party does not have to perform these actions):

- Unit
- Process Area
- Equipment
- Tag Number
- Component Type (e.g. valve, pressure relief device, etc.)
- Size
- Service Type
- Applicable Rule (if overlap; determine which supersedes)
- Location Description
- Accessibility (difficult to monitor? unsafe to monitor?)
- Process Stream Identification
- Process and instrumentation drawing (P&ID) Number
- Safety equipment necessary to perform inspections

In addition, in the LDAR dB, a note should be added that states the date when the Equipment was put in service and the fact (including date) that the Equipment was discovered under this Comprehensive First Amendment LDAR Evaluation Program.

Step 5.2: Begin monitoring newly affected Equipment at the next required monitoring period at the monitoring frequency and leak definition level specified in either the February 2010 Consent Decree or the appropriate LDAR regulation (whichever is applicable) for that type of component.

Action #6: FPC TX: Submit Reports to EPA

Step 6.1: FPC TX LDAR Coordinator shall maintain a record of the start and end dates for each Covered Process Unit Evaluation and other data associated with the Evaluations.

Step 6.2: By no later than two weeks after the completion of each Covered Process Unit Evaluation (i.e., completion of Actions 1 through 5), FPC TX shall submit a report that identifies all Equipment added to the LDAR program, all Equipment removed from the LDAR program, and all other material modifications to the LDAR database to EPA by certified mail. FPC TX shall certify each report it submits pursuant to the requirements of Paragraph 27 of the February 2010 Consent Decree.

EXHIBIT H

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
1445 ROSS AVENUE, SUITE 1200
DALLAS, TX 75202-2733

March 23, 2012

CERTIFIED MAIL - RETURN RECEIPT REQUESTED: 7010 2780 0002 4357 3902

Formosa Plastics Corporation, Texas
201 Formosa Drive
Point Comfort, TX 77978
Attn: Plant Manager

Formosa Hydrocarbons Company, Inc.
P.O. Box 769
103 Fannin Road
Point Comfort, TX 77978

Robert T. Stewart
Kelly Hart & Hallman, LP
301 Congress Avenue, Suite 2000
Austin, TX 78701

Re: United States v. Formosa Plastics Corporation, Texas, et al.
Civil Action No. 6:09-cv-00061
DEMAND FOR STIPULATED PENALTIES

Dear Sir or Madam:

Pursuant to Paragraph 30 of the Consent Decree (Consent Decree) entered in the above-referenced matter, the United States Environmental Protection Agency (EPA) hereby demands payment from Formosa Plastics Corporation, Texas and Formosa Hydrocarbons, Inc. of stipulated penalties for violations of certain requirements of the Consent Decree. These violations involve Formosa Plastics Corporation, Texas, and Formosa Hydrocarbons, Inc. located in Point Comfort, Texas (Formosa). See Consent Decree at ¶ 30.

The Consent Decree requires Formosa to undertake enhancements to the Leak Detection and Repair (LDAR) program. See id., Appendix A. Under Paragraph 32 of the Consent Decree, Formosa is liable for stipulated penalties of $175 for each component that Formosa failed to timely include in its LDAR program. To date, Formosa has failed to timely include 8,191 components. Under Paragraph 32 of the Consent Decree, Formosa is also liable for stipulated penalties of $100 per piece of equipment when the proper leak definition is not implemented within the required time frame. To date, Formosa has failed to monitor 145 connectors at the required leak definition of 250 ppm VOC. Under the terms of the Consent Decree, as described below, the total amount of stipulated penalties due is $1,447,925. The EPA, therefore, makes a demand for $1,447,925.

* * * *

Re: Formosa Plastics Corporation
Demand for Stipulated Penalties

Stipulated Penalties as Calculated under the Terms of the Decree:
Paragraph 32 Penalties

Failure to add existing Covered Equipment to the LDAR Program. Appendix A, Subsection J of this Consent Decree required Formosa to complete an initial LDAR audit of the Point Comfort facility by no later than April 29, 2010. Formosa retained ERM Consulting to conduct the audit and it was completed in a timely manner. The third party audit report notes that, of approximately 5,000 components that were visually inspected during the audit, 104 components were observed that were untagged and that Formosa confirmed had not been included in the LDAR program. Formosa's corrective action was to re-survey the facility to identify, tag, document and monitor fugitive piping components in light liquid or gas/vapor service in accordance with the facility's LDAR program. Formosa also conducted an audit of analyzer tags in NSPS VV service, and included any equipment that was untagged in its LDAR program. Mr. Randy White certified in the September 29, 2010, submittal that "all equipment at the Facility that is regulated under a federal, state, or local leak detection and repair program has been identified and included in the Facility's LDAR program." These components are not the subject of this stipulated penalty demand.

After the initial audit, however, in correspondence dated August 31, 2011, November 2, 2011, January 5, 2012, and February 14, 2012, Formosa reported that it discovered that 8,191 components had not been added to the LDAR program within one year of the Date of Lodging as follows:

No. of Components	Source of Information
11 flanges	Formosa's letter dated August 31, 2011
1,439 valves	Formosa's letters dated November 2, 2011, January 5, 2012, and February 14, 2012
6,712 connectors	Formosa's letters dated November 2, 2011, January 5, 2012, and February 14, 2012
3 pumps	Formosa's letter dated November 2, 2011
24 pressure relief valves	Formosa's letter dated November 2, 2011
2 compressors	Formosa's letter dated November 2, 2011
TOTAL:	**8,191 components**

Re: Formosa Plastics Corporation
Demand for Stipulated Penalties

Paragraph 32 of the Consent Decree states that "For failure to add existing Covered Equipment to the LDAR Program pursuant to Appendix A . . . if Defendant determines (either on its own or through a third-party audit) that it has, by no later than one year after the Date of Lodging, failed to include any Existing Covered Equipment in its LDAR program, Defendant shall pay $175 per piece of Covered Equipment that it failed to include." Formosa did not timely include 8,191 components in its LDAR program, and is liable for stipulated penalties of $1,433,425 (8,191 x $175).

Failure to Implement Internal Leak Definitions. Appendix A, Subsection C of this Consent Decree required Formosa to implement a leak definition for connectors in the Formosa Hydrocarbons unit by no later than 18 months after Date of Lodging. The Date of Lodging was September 29, 2009, and, therefore, the lower leak definition should have been implemented by March 29, 2011. Seven months later, on November 1, 2011, Formosa discovered that the Formosa Hydrocarbons Unit's affected connectors, which were monitored within 18 months of the Date of Lodging, were actually monitored with an internal leak definition of 500 ppm VOC, rather than 250 ppm due to a misunderstanding of a Formosa Hydrocarbons exception within the CD. Of the approximately 18,000 affected connectors monitored within 18 months of the Date of Lodging, 145 connectors were impacted by the misunderstood leak definition for the seven month period.

In correspondence dated November 15, 2011, Formosa reported that it failed to monitor 145 connectors at the required leak definition of 250 ppm VOC. Paragraph 32 states that "For failure to implement the internal leak definitions as required in Appendix A, Subsection C, paragraph 4," Formosa is required to pay stipulated penalties of "$100 per component, but not greater than $25,000 per month per Covered Process Unit." Formosa did not monitor the 145 connectors at the required leak definition of 250 ppm VOC for a period of seven months, and is liable for a substantial stipulated penalty. However, in this one instance, EPA has decided to demand a one-time stipulated penalty in the amount of $14,500 (145 x $100), based on the regulatory requirement of annual monitoring of connectors as stated in Appendix A, Subsection D of the CD.

* * * *

Under Paragraph 39, payment of $1,447,925 must be made in accordance with the provisions of Paragraph 9 of the Consent Decree, which in turn requires the U.S. Attorney's Office for the Southern District of Texas to issue EFT instructions to Formosa for payment of $1,447,925. Under Paragraph 35 of the Consent Decree, Formosa must pay these stipulated penalties within 30 days of receiving this written demand unless it invokes the dispute resolution provisions of the Decree.

The EPA is not aware of any basis upon which Formosa may successfully defend the demand made in this letter. EPA, therefore, also requests Formosa to notify the EPA as soon as possible, but no later than 30 days after its receipt of this letter, if it does not intend to invoke dispute resolution. Upon receipt of that notice, EPA will have the U.S. Attorney's Office prepare the EFT instructions and will arrange to provide these instructions to Formosa.

Re: Formosa Plastics Corporation
Demand for Stipulated Penalties

Thank you for your prompt attention to this matter.

Sincerely,

John Blevins
Director
Compliance Assurance and
Enforcement Division

cc: Scott M. Cernich, Trial Attorney
Environmental Enforcement Section
Environment and Natural Resources Division
U.S. Department of Justice
P.O. Box 7611
Ben Franklin Station
Washington, DC 20044-7611

Bernadette M. Rappold, Director
Special Litigation and Projects Division
Office of Civil Enforcement
Office of Enforcement and Compliance Assurance
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, NW (MC 2248-A)
Washington, DC 20460

AI/AI/EN MCC1892545

Formosa Plastics

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201 Formosa Drive • P.O. Box 700
Point Comfort, TX 77978
Telephone: (361) 987-7000
Fax: (361) 987-2363

RECEIVE
SEP 6 - 2011
Air/Toxics & Inspection Coordination Branch 6EN-A

August 31, 2011

Certified Mail: 7008 1830 0000 9417 0154

Associate Director, Air/Toxics and Inspection Coordination Branch (6EN-A)
Compliance Assurance and Enforcement Division
U.S. Environmental Protection Agency, Region 6
1445 Ross Avenue, Suite 1200
Dallas, TX 75202

Subject: Consent Decree Between U.S. Environmental Protection Agency and Formosa
Civil Action No. 6:09-cv-00061

Dear Madam and Sirs:

In accordance with Section VI, Paragraph 23.b. of the subject Consent Decree, Formosa Plastics Corporation, Texas is hereby providing timely notice of a noncompliance with Appendix A of the Decree. It was discovered that Existing Covered Equipment was not included in the facility-wide Leak Detection and Repair (LDAR) program. This situation has been resolved.

Cause of Violation:
On August 17, 2011, FPC TX discovered eleven (11) flanges that had not been added to the LDAR program within one year of the Date of Lodging. While installing new equipment in the area, it was determined that the flanges were in VOC service and must be included in the LDAR program.

Corrective Actions Taken:
Upon discovery, the flanges were entered into the system and monitored per Method 21. The monitoring results showed that the flanges were not leaking.

Sincerely,

R. P. Smith
VP/General Manager
Formosa Plastics Corporation, Texas

cc: Certified Mail: 7008 1830 0000 9417 0161
Director, Special Litigation and Projects Division
Office of Civil Enforcement
Office of Enforcement and Compliance Assurance
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, NW (MC 2248-A)
Washington, DC 20460

Certified Mail: 7008 1830 0000 9417 0178
Chief, Environmental Enforcement Section
Environment and Natural Resources Division
U.S. Department of Justice
Box 7611 Ben Franklin Station
Washington, D.C. 20044-7611
Re: DOJ No. 90-5-2-1-08995

Certified Mail: 7008 1830 0000 9417 0185
Robert T. Stewart
Kelly Hart & Hallman LLP
301 Congress Avenue, Suite 2000
Austin, Texas 78701
Telephone: (512) 495-6400
FAX: (512) 495-6401

Cernich, Scott

Formosa Plastics

Formosa Plastics Corporation, America
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Point Comfort, TX 77978
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Fax: (361) 987-2363

November 2, 2011

Certified Mail: 7008 1830 0000 9417 1205

Associate Director, Air/Toxics and Inspection Coordination Branch (6EN-A)
Compliance Assurance and Enforcement Division
U.S. Environmental Protection Agency, Region 6
1445 Ross Avenue, Suite 1200
Dallas, TX 75202

Subject: Consent Decree Between U.S. Environmental Protection Agency and Formosa
Civil Action No. 6:09-cv-00061

Dear Madam and Sirs:

In accordance with Section VI, Paragraph 23.b. of the subject Consent Decree, Formosa Plastics Corporation, Texas is hereby providing timely notice of a noncompliance with Appendix A of the Decree. It was discovered that Existing Covered Equipment was not included in the facility-wide Leak Detection and Repair (LDAR) program. This situation has been resolved.

Cause of Violation:
On October 19, 2011, FPC TX discovered that 1395 Valves, 6577 Connectors, 24 Pressure Relief Valves, 3 Pumps, and 2 Compressors had not been added to the LDAR program within one year of the Date of Lodging. While conducting inventory work related to the Green House Gas monitoring rules, it was discovered that this equipment was in VOC service and must be included in the LDAR Program. This area of the unit processes natural gas and was previously believed to be below the VOC content requirement for the LDAR regulations.

Corrective Actions Taken:
Upon discovery, the covered equipment was entered into the system and scheduled for monitoring per Method 21.

Sincerely,

for RPS

R. P. Smith
VP/General Manager
Formosa Plastics Corporation, Texas

Corr.
90-5-2-1-08995

cc: Certified Mail: 7008 1830 0000 9417 1212
Director, Special Litigation and Projects Division
Office of Civil Enforcement
Office of Enforcement and Compliance Assurance
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, NW (MC 2248-A)
Washington, DC 20460

Certified Mail: 7008 1830 0000 9417 1229
Chief, Environmental Enforcement Section
Environment and Natural Resources Division
U.S. Department of Justice
Box 7611 Ben Franklin Station
Washington, D.C. 20044-7611
Re: DOJ No. 90-5-2-1-08995

Certified Mail: 7008 1830 0000 9417 1236
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AI/AI/EN 1100189259577

Formosa Plastics

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November 15, 2011

Certified Mail: 7008 1830 0000 9417 1120

Associate Director, Air/Toxics and Inspection Coordination Branch (6EN-A)
Compliance Assurance and Enforcement Division
U.S. Environmental Protection Agency, Region 6
1445 Ross Avenue, Suite 1200
Dallas, TX 75202

Subject: Consent Decree Between U.S. Environmental Protection Agency and Formosa
Civil Action No. 6:09-cv-00061

Dear Madam and Sirs:

In accordance with Section VI, Paragraph 23.b. of the subject Consent Decree, Formosa Plastics Corporation, Texas is hereby providing timely notice of a noncompliance with Appendix A of the Decree. It was discovered that an incorrect internal leak definition was used when conducting Method 21 inspections of connectors. This situation has been resolved.

Cause of Violation:
On November 1, 2011, FPC TX discovered that the FHC (Formosa Hydrocarbons) Unit's affected connectors, which were monitored within 18 months of the Date of Lodging, were actually monitored with an internal leak definition of 500 ppm VOC, rather than 250 ppm due to a misunderstanding of an FHC exception within the applicable Consent Decree Subsection. This discovery indicated that of the approximately 18,000 affected connectors monitored within 18 months of the Date of Lodging, 145 connectors were impacted by the misunderstood leak definition.

Corrective Actions Taken:
The internal leak definition for connectors in FHC is set at 250 ppm, and all subsequent monitoring conducted in 2011 used this definition.

Sincerely,

R. P. Smith
VP/General Manager
Formosa Plastics Corporation, Texas

cc: Certified Mail: 7008 1830 0000 9417 1137
Director, Special Litigation and Projects Division
Office of Civil Enforcement
Office of Enforcement and Compliance Assurance
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, NW (MC 2248-A)
Washington, DC 20460

Certified Mail: 7008 1830 0000 9417 1144
Chief, Environmental Enforcement Section
Environment and Natural Resources Division
U.S. Department of Justice
Box 7611 Ben Franklin Station
Washington, D.C. 20044-7611
Re: DOJ No. 90-5-2-1-08995

Certified Mail: 7008 1830 0000 9417 1151
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A/AI/EN 11001892595

Formosa Plastics

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January 5, 2012

RECEIVE
JAN 9
Air/Toxics & Inspection Coordination Branch 6EN-A

Certified Mail: 7008 1830 000 9417 1441

Associate Director, Air/Toxics and Inspection Coordination Branch (6EN-A)
Compliance Assurance and Enforcement Division
U.S. Environmental Protection Agency, Region 6
1445 Ross Avenue, Suite 1200
Dallas, TX 75202

Subject: Consent Decree Between U.S. Environmental Protection Agency and Formosa
Civil Action No. 6:09-cv-00061

Dear Madam and Sirs:

In accordance with Section VI, Paragraph 23.b. of the subject Consent Decree, Formosa Plastics Corporation, Texas is hereby providing timely notice of a noncompliance with Appendix A of the Decree. It was discovered that Existing Covered Equipment was not included in the facility-wide Leak Detection and Repair (LDAR) program. This situation has been resolved.

Cause of Violation:
On December 19, 2011, FPC TX discovered that 9 Valves and 29 Connectors had not been added to the LDAR program within one year of the Date of Lodging. While conducting routine inventory maintenance activities, it was discovered that this VOC equipment was not in the LDAR program. The affected equipment was not identified by the operating department as being in VOC service when the LDAR tagging was previously completed.

Corrective Actions Taken:
Upon discovery, the covered equipment was added to the LDAR system and monitored as required per Method 21.

Sincerely,

R. P. Smith
VP/General Manager
Formosa Plastics Corporation, Texas

cc: Certified Mail: 7008 1830 0000 9417 1458
Director, Special Litigation and Projects Division
Office of Civil Enforcement
Office of Enforcement and Compliance Assurance
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, NW (MC 2248-A)
Washington, DC 20460

Certified Mail: 7008 1830 0000 9417 1465
Chief, Environmental Enforcement Section
Environment and Natural Resources Division
U.S. Department of Justice
Box 7611 Ben Franklin Station
Washington, D.C. 20044-7611
Re: DOJ No. 90-5-2-1-08995

Certified Mail: 7008 1830 0000 9417 1885
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Cernich, Scott

Formosa Plastics

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February 14, 2012

Certified Mail: 7008 1830 0000 9417 1908

Associate Director, Air/Toxics and Inspection Coordination Branch (6EN-A)
Compliance Assurance and Enforcement Division
U.S. Environmental Protection Agency, Region 6
1445 Ross Avenue, Suite 1200
Dallas, TX 75202

Subject: Consent Decree Between U.S. Environmental Protection Agency and Formosa
Civil Action No. 6:09-cv-00061

Dear Madam and Sirs:

In accordance with Section VI, Paragraph 23.b. of the subject Consent Decree, Formosa Plastics Corporation, Texas is hereby providing timely notice of a noncompliance with Appendix A of the Decree. It was discovered that Existing Covered Equipment was not included in the facility-wide Leak Detection and Repair (LDAR) program. This situation has been resolved.

Cause of Violation:
On January 31, 2012, FPC TX discovered that 35 Valves and 106 Connectors had not been added to the LDAR program within one year of the Date of Lodging. While conducting routine inventory maintenance activities, it was discovered that this VOC equipment was not in the LDAR program. The equipment had been included in the required AVO inspections, and there was no indication of any leaks.

Corrective Actions Taken:
Upon discovery, the covered equipment was added to the LDAR system and monitored as required per Method 21 with no leaks found.

Sincerely,

R. P. Smith
VP/General Manager
Formosa Plastics Corporation, Texas

Corr.

90-5-2-1-08995

cc: Certified Mail: 7008 1830 0000 9417 1915
Director, Special Litigation and Projects Division
Office of Civil Enforcement
Office of Enforcement and Compliance Assurance
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, NW (MC 2248-A)
Washington, DC 20460

Certified Mail: 7008 1830 0000 9417 1922
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Box 7611 Ben Franklin Station
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Re: DOJ No. 90-5-2-1-08995

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AV/AT/EN 7011 0110 0000 1782 5147

Formosa Plastics

April 5, 2012

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RECEI
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Air/Toxics & Ins
Coordination B
6EN-A

Certified Mail: 7011 0110 0000 1782 5147

Associate Director, Air/Toxics and Inspection Coordination Branch (6EN-A)
Compliance Assurance and Enforcement Division
U.S. Environmental Protection Agency, Region 6
1445 Ross Avenue, Suite 1200
Dallas, TX 75202

Subject: Consent Decree Between U.S. Environmental Protection Agency and Formosa
Civil Action No. 6:09-cv-00061

Dear Madam and Sirs:

In accordance with Section VI, Paragraph 23.b. of the subject Consent Decree, Formosa Plastics Corporation, Texas is hereby providing timely notice of a noncompliance with Appendix A of the Decree. It was discovered that Existing Covered Equipment was not included in the facility-wide Leak Detection and Repair (LDAR) program. This situation has been resolved.

<u>Cause of Violation:</u>
On March 23, 2012, FPC TX discovered that 46 Valves, 115 Connectors, 1 PRV, and 2 Pumps had not been added to the LDAR program within one year of the Date of Lodging. During the Third-Party LDAR Audit required under Appendix A, Section J, Paragraph 26 of the subject Consent Decree, these components were identified as being in VOC service but were not in the LDAR Program. These missed components will be included in the Audit report that will be submitted at a later date.

On March 26, 2012, FPC TX discovered that 18 Valves and 44 Connectors had not been added to the LDAR program within one year of the Date of Lodging. While conducting routine inventory maintenance activities, it was discovered that this VOC equipment was not in the LDAR program.

<u>Corrective Actions Taken:</u>
Upon discovery, the covered equipment was added to the LDAR system and monitored as required per Method 21.

Sincerely,

R. P. Smith
VP/General Manager
Formosa Plastics Corporation, Texas

cc: Certified Mail: 7011 0110 0000 1782 5154
Director, Special Litigation and Projects Division
Office of Civil Enforcement
Office of Enforcement and Compliance Assurance
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, NW (MC 2248-A)
Washington, DC 20460

Certified Mail: 7011 0110 0000 1782 5161
Chief, Environmental Enforcement Section
Environment and Natural Resources Division
U.S. Department of Justice
Box 7611 Ben Franklin Station
Washington, D.C. 20044-7611
Re: DOJ No. 90-5-2-1-08995

Certified Mail: 7011 0110 0000 1782 5178
Robert T. Stewart
Kelly Hart & Hallman LLP
301 Congress Avenue, Suite 2000
Austin, Texas 78701
Telephone: (512) 495-6400
FAX: (512) 495-6401

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 6

1445 Ross Avenue

Dallas, Texas 75202-2733

JUN 10 2014

CERTIFIED MAIL – RETURN RECIEPT REQUESTED: 7012 3050 0001 6500 4318

Mr. Randy Smith
General Manager
Formosa Plastics Corporation
P.O. Box 700
Point Comfort, Texas 77978

Re: Clean Air Act Section 114 Information Request

Dear Mr. Smith:

Enclosed is an Information Request (Request) issued to Formosa Plastics Corporation under the authority of Section 114 of the Clean Air Act (CAA). The purpose of this Request is to obtain information regarding the incident that occurred on May 2, 2013.

Please provide the information requested within twenty (20) working days of your receipt of this letter to Sherronda Phelps at the above address. If you have any questions, need to request an extension, or wish to schedule a meeting to discuss this Request, please contact Sherronda Phelps, a member of my staff, at (281) 983-2122.

Sincerely,

John Blevins
Director
Compliance Assurance and
Enforcement Division

Enclosure

Enclosure A

Information Request
Formosa Plastics Corporation

The U.S. Environmental Protection Agency (EPA) Region 6 is issuing this request for information to Formosa Plastics Corporation pursuant to Section 114 of the Clean Air Act (CAA), 42 U.S.C. §7414 for the purpose of determining compliance with the CAA, including CAA section 112(r). Section 114(a) authorizes the Administrator of EPA to require the submission of information. The Administrator has delegated this authority to the Director of the Compliance Assurance and Enforcement Division, EPA Region 6. This information request pertains to Formosa Plastics located in Point Comfort, Texas.

You must submit all requested information under an authorized signature on the certification statement in Enclosure B, which provides:

> I certify under penalty of law that I have examined and am familiar with the information in the enclosed documents, including all attachments. Based on my inquiry of those individuals with primary responsibility for obtaining the information, I certify that the statements and information are, to the best of my knowledge and belief, true and complete. I am aware that there are significant penalties for submitting false statements and information, including the possibility of fine and imprisonment for knowing violations.

We may use any information submitted in response to this request in an administrative, civil, or criminal action.

All information responsive to this Request should be sent to the following:

Sherronda Phelps (6EN-ASH)
U.S. EPA Region 6
10625 Fallstone Road
Houston, TX 77099-4303

I. Instructions

1. If information or documentation not known or not available to you as of the date of submission of a response to this Request should later become known or available to you, you must supplement your response to EPA. Moreover, should you find, at any time after the submission of your response, that any portion of the submitted information is false of misrepresents the truth, you must notify EPA of this fact as soon as possible and provide EPA with a corrected response. There are significant penalties for submitted false information, including the possibility of fine or imprisonment.

2. For each document produced in response to this Request, indicate on the document, or in some other reasonable manner, the number of the question to which it responds. Please submit all information for each question in a logically sequenced, bound format.

3. Please provide a separate response to each question and subpart of a question set forth in this Request and precede each answer with the number of the question to which it corresponds.

4. In your response to each question, identify each person answering the question, including each person answering any subparts of the question, as well as each person consulted in the preparation of your response.

5. For each question, identify each document consulted, examined, or referred to in the preparation of the response or that contains information responsive to the question, and provide a true and correct copy of each such document if not provided in response to another specific question. Indicate on each document produced in response to this Request the number of question to which it corresponds.

6. If you have previously provided information responsive to one or more of the questions in Part IV of this information request, please either (1) re-submit the information with your response to this information request or, (2) in your response to such questions, identify the information previously provided to EPA, indicate the date and the person to whom you provided the information and acknowledge that the certification of your response to this information request (see Enclosure B) also applies to the information you previously submitted.

7. Failure to submit requested information in accordance with statutory or regulatory requirements constitutes a violation of the CAA.

II. Confidential Business Information

You must provide the information requested even though you consider it confidential information or trade secrets. You may assert a business confidentiality claim for part or all of the information requested, as described below and set forth in 40 C.F.R. Part 2, Subpart B. Information covered by such a claim will be disclosed by EPA only to the extent and only by the procedures set forth in 40 C.F.R. Part 2, Subpart B. If no confidentiality claim accompanies the information when EPA receives it, the information may be made available to the public by the EPA without further notice to you. 40 C.F.R § 2.203(a); see also 41 Fed. Reg. 36,902 (Sept. 1, 1976); 43 Fed. Reg. 4,000 (Dec. 18, 1985).

If you wish EPA to treat any information or response as confidential, you must advise EPA and comply with the following procedures. Place on or attach to the information at the time it is submitted to EPA a cover sheet, stamped or typed legend, or other suitable form of notice employing such language as trade secret, proprietary, or company confidential. You must clearly identify allegedly confidential portions of otherwise non-confidential documents

and you may want to submit these separately to facilitate identification and handling by EPA. If you seek confidential treatment only until a certain date or until occurrence of a certain event, state this in your notice. Include an explanation of your claim that disclosure of the information would likely result in substantial harmful effects on your business' competitive position, referring to the applicable substantive criteria in 40 C.F.R. § 2.308. Specify the harmful effects, why they should be viewed as substantial and the causal relationship between disclosure and substantial harmful effects. You must make a separate assertion of confidentiality for each response and each record that you consider confidential. Submit a written index for each record for which you assert a claim of confidentiality that includes the following information:

FDA?

1. Describe the response or document and nature of the information. For a document, include the name of the author(s), the date the document was issued, the summary title, and the names of the recipient(s);

2. Specify the portion of the response or document for which you assert a claim of confidentiality by reference to page numbers, paragraphs, and lines, or specify entire document.

3. Briefly identify the basis of your claim.

If you believe that facts and documents necessary to substantiate confidentiality are themselves confidential, please identify them as such so that EPA may maintain their confidentiality pursuant to 40 C.F.R. Part 2, Subpart B.

III. Definitions

1. Unless specifically defined in this Request or in the CAA or its implementing regulations, all terms used in this Request will have their ordinary meaning.

2. The terms "document" or "documents" shall mean any object that records, stores, or presents information, both electronic and tangible, and includes writings of any kind, formal or informal, whether or not wholly or partially in handwriting, including by the way of illustration and not by way of limitation, any invoice, manifest, bill of lading, receipt, endorsement, check bank draft, canceled check, deposit slip, withdrawal slip, order, correspondence, record book, minutes, memorandum of telephone and other conversations, including meetings, agreements and the like, diary, calendar, desk pad, scrapbook, notebook, bulletin, circular, form, pamphlet, statement, journal, postcard letter telegram, telex report, notice, message, analysis, comparison, graph, chart, interoffice or intra office communication, photo stat or other copy of any documents, microfilm or other film record, any photograph, sound recording on any type device, any punch card, disc or disc pack; any tape or other type of memory generally associated with computers and data processing (together with the programming instructions and other written

material necessary to use such punch card, disc, or disc pack, tape or other type of memory); and (a) every copy of each document which is not an exact duplicate of a document which is produced, (b) every copy which has any writing, figure or notation, annotation or the like on it, (c) drafts, (d) attachments to or enclosures with any document, and (e) every document referred to in any other document.

3. The term "Formosa" or "Formosa Plastics" or "Formosa Plastics Corporation" includes any officer, director, agent, or employee of Formosa Plastics Corporation, including any merged, consolidated, or acquired predecessor or parent, subsidiary, division, or affiliate thereof, and any related partnerships or limited partnerships.

4. The terms "you" or "yours" shall mean Formosa Plastics Corporation, as defined in Paragraph 3, above, including the company or corporation , its subsidiaries, division, affiliates, predecessors, successors, assigns, and its former and present officers, directors, agents, employees, representatives, attorneys, consultants, accountants and all other persons acting on its behalf.

5. The term "Facility" refers to Formosa Plastics Corporation located at 201 Formosa Dr. in Point Comfort, Texas.

6. Words in the masculine shall be construed as the feminine, and vice versa, and words in the singular shall be construed in the plural, and vice versa, where appropriate in the context of a particular question or questions.

IV. Information Requested

1. Provide a timeline that includes all relevant information, and explains the events, leading to and including the fire and release that occurred at the Facility from the Ethylene Purification Unit ("EPU") on May 2, 2013.

2. Provide a current copy of any root cause analysis or other investigation that Formosa Plastics, or anyone working on behalf of Formosa Plastics, has produced, whether in draft or final form, relating to the causes, or possible causes, of the May 2, 2013 release and fire from the EPU at the Point Comfort, Texas Facility.

3. Provide a brief process description for the process units related to the fire and release that were in place at the Point Comfort facility on May 2, 2013. Please describe any revisions that have been made since May 2, 2013 to the Process Description.

4. Provide a map of the facility showing the EPU, surrounding process units and other equipment or structures. Provide a list of the surrounding process units, structures and equipment including the total amounts of regulated substances or other extremely hazardous substances that were stored, processed, produced, or handled therein, including any transit pipelines or other conveyances of substances surrounding the EPU.

5. Who performed, and who else was present at, the lower explosive limit testing and oxygen testing that occurred on May 2, 2013 in relation to the EPU unit? What equipment and techniques were used to test the EPU? Does Formosa have an SOP that covers this type of testing? If so, then please attach a copy of the SOP as it existed on May 2, 2013. Describe the training history and experience of the individual or individuals performing the EPU testing.

6. How does Formosa decide when to close a unit that is no longer in service? Is there a procedure for when and how to close or partially close a unit? If so, then please provide documentation.

7. What substances were released, and in what quantity, during the EPU release and fire that took place at the Point Comfort, Texas Facility on May 2, 2013? Additionally, identify all substances, including quantities, in the EPU prior to the fire and release on May 2, 2013.

8. What emergency response measures were taken to stop and/or to minimize hazards from the fire and release from the EPU on May 2, 2013?

9. Were there any evacuations or shelter-in-places ordered as a result of the fire and release from the EPU on May 2, 2013?

10. Describe all injuries attributable to the fire and release from the EPU on May 2, 2013, including the name of the injured person, the employer and job title or position of the person at the time of the fire and release, current contact information for the person, and a brief description of the severity of the injury (i.e. requiring hospitalization, etc.). Also, please identify on the map referenced in question # 4 of this information request the location of the person injured in the fire and release on May 2, 2013.

11. What measures or actions have you taken to prevent a recurrence of the fire or release that occurred at the Point Comfort, Texas Facility on May 2, 2013 from the EPU?

12. What lessons did you learn as a result of the fire and release that occurred at the Point Comfort Facility on May 2, 2013?

13. Did Formosa undertake any hazard analysis or hazard identification related to the EPU prior to the fire and release on May 2, 2013? If so, then please provide documentation of that hazard assessment. Additionally, please provide any revised documents that have been modified since the May 2, 2013 fire and release.

14. In 1995 Formosa bypassed the first and second stages of the EPU process via a bypass line that allowed EPU stage three to continue functioning; however, the incomplete catalyst regeneration substances (catalyst, hydrocarbons, etc.) that had been present in the first and second stages remained in the unit for an additional 18 years, what are the industry standards and Formosa standards for removing pyrophoric substances and other flammable or explosive substances from an out of service unit?

15. Does Formosa have a policy or SOP for determining when a unit will be decommissioned, bypassed, partially bypassed, etc., when it will no longer be used in whole or part for an extended period? If so, then please provide the document.

16. If a 2008 PHA recommended that the first and second stages of the EPU be decommissioned then why did work not commence until 2011? The work that occurred in 2011 on the EPU consisted of adding slip blinds and air gaps to isolate the no longer used stages 1 and 2 of the EPU, does Formosa consider this work "decommissioning" as used in the 2008 PHA?

17. Do you consider the EPU an RMP covered process unit or part of an RMP covered process?

18. Please identify, and provide a copy of, any industry standard, internal standard, or manufacturer's recommendations you followed with respect to the mechanical integrity of piping and related process equipment in the affected process unit/s associated with the fire and release on May 2, 2013.

19. Did you perform any mechanical integrity inspections or tests of the High Density Polyethylene I Unit, the EPU, or EPN's C-212 and C-212B prior to the May 2, 2013 fire and release? Please provide a history of inspections and tests for the unit and equipment mentioned above. Please provide results, reports, or other supporting documentation for the last 3 inspections preformed on these equipment pieces.

Enclosure B

Clean Air Act Section 114 Information Request
Statement of Certification

I certify under penalty of law that I have examined and am familiar with the information in the enclosed documents, including all attachments. Based on my inquiry of those individuals with primary responsibility for obtaining the information, I certify that the statements and information are, to the best of my knowledge and belief, true and complete. I am aware that there are significant penalties for submitting false statements and information, including the possibility of fine and imprisonment for knowing violations.

Signature: _____

Printed Name: _____

Office or Title: _____

Date: _____

Region 6 Compliance Assurance and Enforcement Division

INSPECTION REPORT

Inspection Date(s):	04/01-02/2014		
Media:	Air		
Regulatory Program(s)	RMP		
Company Name:	**Occidental Petroleum Corporation**		
Facility Name:	**Occidental Chemical Corp. - BG Chlor-Alkali-VCM**		
Facility Physical Location:	2400 Miller Cut-Off Road		
(city, state, zip code)	La Porte, TX 77571		
Mailing address:	P.O. Box 500		
(city, state, zip code)	Deer Park, TX 77536		
County/Parish:	Harris		
Facility Contact:	Jeff Anderson	Process Safety Engineer	
	Jeffrey_Anderson@oxy.com		
FRS Number:	110017769734		
Identification/Permit Number:	RMP EPA Facility Identifier: 1000 0007 9826/Air Operating Permit: O-1368		
Media Number:	AFS # 48-201-00320		
NAICS:	325181/325199		
SIC:			

Facility Representatives:	Jeff Anderson	Process Safety Engineer	(281) 476-2350
	Kenneth J. Carlson	Manufacturing Services Manager	(281) 476-2350
	Tim Lancelin	Emergency Services Supervisor	(281) 476-2258
	Henry Beadles	Inspector Team Leader	(281) 476-2350
	Dave Peterson	Instrumentation Specialist	(281) 476-2350
	Mike Rouse	Sr. Maintenance Engineer	(281) 476-2350
EPA Inspectors:	Dave Hensley	EPA Region 6/6EN-AS	(214) 665-6739
State Inspector(s):			
Other Inspector(s):			

Metadata	Title:	Occidental Petroleum Corporation Occidental Chemical Corp. - BG Chlor-Alkali-VCM La Porte Harris Texas
	Author:	US EPA Region 6 Compliance Assurance and Enforcement Division Dallas TX
	Subject:	Inspection Report CAA Section 112(r) / Accident Prevention Provisions (40 CFR Part 68) inspection
	Keywords:	

EPA Lead Inspector Signature/Date	Dave Hensley	6-24-2014
	Dave Hensley	Date
Supervisor Signature/Date	Samuel Tates	6/25/2014
	Samuel Tates	Date

Section I - INTRODUCTION

PURPOSE OF THE INSPECTION

I (Dave Hensley), EPA Region 6 inspector, arrived at the Occidental Petroleum Corporation/Occidental Chemical Corp. - BG Chlor-Alkali-VCM (the facility) at 09:00 AM on April 01,2014, for an unannounced inspection. I met with Jeff Anderson, Process Safety Engineer, and Kenneth J. Carlson, Manufacturing Services Manager. I presented my credentials to Mr. Anderson and Mr. Carlson and informed them that this was an EPA inspection to determine compliance with the facility's Risk Management Program, which means a compliance evaluation of Section 112(r) of the Clean Air Act and the Chemical Accident Prevention Provisions in 40 CFR Part 68. I inquired if Occidental Chemical Corp. - BG Chlor-Alkali-VCM had a union representative present and they do not.

FACILITY DESCRIPTION

Occidental Chemical Corporation (OxyChem) is a leading North American manufacturer of polyvinyl chloride (PVC) resins, chlorine and caustic soda – key building blocks for a variety of indispensable products such as plastics, pharmaceuticals, and water treatment chemicals. Other OxyChem products include caustic potash, chlorinated organics, sodium silicates, chlorinated isocyanurates, and calcium chloride. http://www.oxy.com/OurBusinesses/Chemicals/Pages/Overview.aspx

From the Risk Management Plan:
"The Occidental Chemical Corporation - BG Chlor-Alkali-VCM facility at La Porte, Texas, is a producer of industrial chemicals. The BG Chlor-Alkali-VCM facility consists of two chemical production plants that are both owned by OxyChem: Battleground Chlor-Alkali Plant and La Porte VCM Plant. The Risk Management Plan describes La Porte VCM Plant as North American Industry Classification System (NAICS) code 325199 Other Basic Organic Chemical Manufacturing and Battleground Chlor-Alkali Plant as NAICS code 325181 Alkalies and Chlorine Manufacturing."

Section II - OBSERVATIONS

40 C.F.R. Part 68 – CHEMICAL ACCIDENT PREVENTION PROVISIONS
Subpart A – General

40 C.F.R. § 68.10 Applicability

I observed that The Occidental Chemical Corporation - BG Chlor-Alkali-VCM facility (Occidental) is a stationary source that has a Title V Air Permit (O-1368) and more than a threshold quantity of a regulated substance in two processes; therefore, these regulations are applicable. The Risk Management Plan describes two covered process, containing seven flammable and toxic chemicals held at more than a threshold quantity. The processes are Program 3.

40 C.F.R. § 68.12 General requirements

I noted that Occidental submitted a Risk Management Plan on June 15, 2009. I observed that Occidental has developed and implemented a management system, conducted a hazard assessment, implemented the prevention requirements of 40 C.F.R. § 68.65 - § 68.87, developed and implemented an emergency response program, and submitted the data elements from 40 C.F.R. § 68.175 in their RMP.

40 C.F.R. § 68.15 Management

Mr. Anderson and I reviewed Occidental's management system documentation for the implementation of the Risk Management Program elements, documentation describing who is assigned to oversee the Risk Management Program, and documentation showing who is assigned to positions responsible for portions of the Risk Management Program on Occidental's intranet site. The majority of Occidental's Risk Management Program documentation was maintained on this intranet site. It was accessible via any computer on the facility's system.

Subpart B – Hazard Assessment
40 C.F.R. § 68.20 Applicability

Occidental's Risk Management Plan states that its processes are classified as Program 3 stationary sources subject to this part; therefore, Occidental is required to prepare a worst-case release scenario analysis and complete the five year accident history.

40 C.F.R. § 68.22 Offsite consequence analysis parameters

I spoke with Mr. Anderson about the offsite consequence analysis conducted by Occidental. They used the tables provided by EPA to calculate the distance to the endpoint in the flammable worst-case scenario. Occidental used an endpoint of overpressure of 1 psi, a wind speed of 1.5 m/s, an atmospheric stability of F class, temperature of 25 °C, 50 % humidity, a ground level release, a roughness of urban, and a temperature of released substance at process temperature.

40 C.F.R. § 68.25 Worst-case release scenario analysis

Occidental investigated a worst-case release scenario for the toxic substance chlorine, and all other toxic and flammable substances listed on their Risk Management Plan. Occidental used the release of the entire volume of their largest vessel without controls in the calculation of their worst-case scenario. Occidental used the parameters defined in 40 C.F.R. § 68.22 to determine the distance to the endpoints.

40 C.F.R. § 68.28 Alternative release scenario analysis

Occidental identified and analyzed at least one alternative release scenario for each regulated flammable or toxic substance held in a covered process more likely to occur than the worst-case

scenario that could reach an offsite receptor. Occidental used the parameters defined in 40 C.F.R. § 68.22 to determine the distance to the end point. Mitigation systems were considered by Occidental. The five year accident history in 40 C.F.R. § 68.42 and the failure scenarios identified in 40 C.F.R. § 68.50 were considered in selecting the alternate release scenario.

40 C.F.R. § 68.30 Defining offsite impacts – Population

The population included in the distance to the endpoint in the Risk Management Plan was estimated to two significant figures using United States Census data.

40 C.F.R. § 68.33 Defining offsite impacts – Environment

I observed that Occidental identified environmental receptors through modeling that should be included in the distance to the endpoint. The documentation from the modeling at the time that the Risk Management Plan was submitted was not available.

40 C.F.R. § 68.36 Review and update

Mr. Anderson explained that the offsite release scenario analysis is reviewed at least once every five years. Occidental reviews offsite impacts when an addition or changes are made to processes to determine if a new offsite impact analysis or any other changes to the Risk Management Plan are necessary. It was also noted that Mr. Anderson will be doing this review soon for the Risk Management Plan submittal due June 15, 2014.

40 C.F.R. § 68.39 Documentation

I asked Mr. Anderson to provide documentation for the worst case scenario and alternative release scenario. Mr. Anderson produced a binder with documentation, which we reviewed. This documentation provided a description of the process equipment and substance selected as worst case, assumptions and parameters used, the rationale for selection of specific scenarios, documentation of estimated quantity released, release rate, duration of release, methodology used to determine distance to endpoints, and data used to estimate population. This documentation did not include data used to estimate environmental receptors potentially affected as required by 40 C.F.R. § 68.39 (e). Occidental did provide a model that showed the environmental receptors of the worst case scenario during the inspection.

40 CFR § 68.42 Five year accident history

Occidental has reported two accidents in its five year accident history in the current Risk Management Plan submitted June 15, 2009. An accidental release of 100 pounds of anhydrous hydrogen chloride and 2 pounds of vinyl chloride occurred on August 20, 2008, from a furnace. The cause of this incident was described as equipment failure in the Risk Management Plan. The other release was of 100 pounds of

hydrogen chloride on November 6, 2004. Both accidents are listed because they resulted in onsite property damage. These incidents are over five years old and will not appear on the next Risk Management Plan submittal on or before June 15, 2014.

Subpart D – Program 3 Prevention Program
40 C.F.R. § 68.65 Process safety information

I reviewed Occidental's documentation of process safety information with Mr. Anderson. This documentation is maintained on the intranet and is available across the facility. It included information pertaining to the hazards of substances in the processes, the technology of the processes, and the equipment in the processes. The documentation included Process and Instrumentation Diagrams (P&IDs), block diagrams, and process descriptions of the Risk Management Program processes.

40 C.F.R. § 68.67 Process hazard analysis

On April 1, 2014, I reviewed process hazard analyses (PHAs) for several units. They appeared to cover the hazards of the processes, and to meet the requirements of 68.67. The Risk Management Program units had PHAs done every 5 years or sooner as seen by a schedule Mr. Anderson showed me.

40 C.F.R. § 68.69 Operating procedures

Mr. Anderson and I reviewed the annual certifications of operating procedures for the Risk Management Program processes. We reviewed two operating procedures from the LP VCM Process. The Oxy Area certification, dated September 19, 2011, was the most recent annual certification available for this process. We also reviewed the 400 Cracking operating procedure, which was most recently certified in November 2011. These documents were both found on the facility intranet.

The operating procedures for the BG Chlor-Alkali Risk Management Program process were certified annually on the following dates for Liquefaction Area: November 8, 2011, October 8, 2012, and October 8, 2013.

40 C.F.R. § 68.71 Training

I asked Mr. Anderson and Mr. Carlson about how the training was managed at Occidental. They told me that there is a combination of electronic databases and hard copy records maintained. No overdue trainings were identified during the inspection.

40 C.F.R. § 68.73 Mechanical integrity

I reviewed Occidental's written procedures to maintain the ongoing mechanical integrity of process equipment. It was a document that discussed the program broadly. Specifics of the program were in a number of detailed procedures. On April 2, 2014, I spoke with Henry Beadles, Inspector Team Leader,

about fixed equipment. I also spoke with Dave Peterson, Instrumentation Specialist, about instrumentation and Mike Rouse, Sr. Maintenance Engineer, about rotating equipment. They described the inspection and testing practices at Occidental, which follow Recognized and Generally Accepted Good Engineering Practices (RAGAGEP). I observed that Occidental documented inspections and tests being performed on process equipment. I reviewed some of the inspection documentation. For example, I reviewed a piping inspection (CR 10LPVCM417EDC-AA7-2001-1). The inspection documentation identified the date of the inspection, the name of the person who performed the inspection, the serial number or other identifier of the equipment, a description of the inspection performed, and the results of the inspection.

40 C.F.R. § 68.75 Management of change

I reviewed Occidental's written procedure for conducting Management of Change (MOC). It addresses the technical basis for the change, the impact on safety and health, the modifications of operating procedures, the necessary time period for the change, and the authorization requirements for the proposed change. Occidental uses a system based on their intranet to manage MOC documentation. Jeff Anderson and I looked at several documents on this system. We reviewed the following MOCs:

MOC #	Type	Description	Unit	Status
6066	Temporary	Clamp on O2 line	Oxy	Closed
6109	Permanent	Modify VCM Check Speer Alarm	VCM	Closed
6232	Permanent	Remove TM0421 from Service	Oxy	Open
6356	Temporary	Install composite wrap	VCM	Open

40 C.F.R. § 68.77 Pre-startup review

The MOC procedures address the need for pre-startup review. I reviewed a completed pre-startup review with Mr. Anderson, via the Intranet electronic documentation system.

40 C.F.R. § 68.79 Compliance audits

I reviewed copies of the last two compliance audits conducted for each Risk Management Program unit as follows:

Compliance audits	
Title	**Date**
Health, Environment, Safety, and Security QA/QC Audit Report the Battleground Plant	May 13-17, 2013
Health, Environment, Safety, and Security QA/QC Audit Report the Battleground Plant	May 17-21, 2010
Health, Environment, Safety, and Security QA/QC Audit Report the La Porte VCM Plant	November 5-9, 2012
Health, Environment, Safety, and Security QA/QC Audit Report the La Porte VCM Plant	November 1-5, 2010

The audit team included personnel from other similar facilities owned by OxyChem. The audits appeared to meet the requirements of 68.79; however, they could be improved upon to be a more valuable tool in the prevention of accidents.

40 C.F.R. § 68.81 Incident investigation

I reviewed incident reports for several events shown below. All of these incidents had detailed reports that included the required components (e.g., root cause and corrective actions). Occidental has a tracking system in place to track any corrective actions to resolution. These incident reports are valuable tools in the accident prevention program.

Incident Reports Reviewed	
Date	**Description**
June 10, 2011	LP VCM Propylene Release
August 11, 2011	Release of VC from Vent Chiller
October 11, 2012	LP VC Release form Pipeline Pump
September 4, 2013	BG Cl Tank Car Release
February 13, 2014	VCM Release from Vent Recovery Compressor

40 C.F.R. § 68.83 Employee participation

Mr. Anderson and I reviewed a copy of a written plan of action to implement employee participation. In this document, Occidental established a policy that provided PHAs, SOPs, and MOCs to employees. These documents could be accessed on their intranet.

40 C.F.R. § 68.85 Hot work permit

Occidental has a hot work permits program. The permits contained the required information.

40 C.F.R. § 68.87 Contractors

I asked Mr. Anderson and Mr. Carlson how Occidental manages contract labor and ensures that contractors have the proper training prior to working in a Risk Management Program area. Contractors must go though site specific training of the hazards of the processes and the requirement of their job tasks.

Subpart E – Emergency Response
40 C.F.R. § 68.90 Applicability

Occidental is a stationary source with Program 3 processes subject to this part; therefore, Occidental is required to comply with the requirements of 40 C.F.R. § 68.95. Occidental employees respond to accidental releases of regulated substances.

40 C.F.R. § 68.95 Emergency response program

I met with Tim Lancelin, Emergency Services Supervisor, on April 2, 2014. We discussed Occidental's emergency response program in detail. Occidental has developed an emergency operations procedure, which includes procedures for informing the public and local emergency response agencies about accidental releases. Additionally, there is an electronic system that is used to quickly send notification to surrounding facilities and municipalities. First aid and emergency medical treatments, as well as, the maintenance, inspection, and testing of emergency equipment are in the emergency procedure. Mr. Lancelin and I reviewed the emergency responder training, emergency equipment maintenance schedule, and the emergency program.

Subpart G – Risk Management Plan
40 C.F.R. § 68.150 Submission

Occidental submitted a single Risk Management Plan on June 15, 2009, which includes the information required in 40 C.F.R. § 68.155. A new submittal will be required on June 15, 2014, if no updates or corrections occur as per 40 § 68.190 or 98.195.

Section III – AREAS OF CONCERN

40 C.F.R. § 68.39 (e) Documentation of data used to estimate environmental receptors

> "§ 68.39 Documentation. The owner or operator shall maintain the following records on the offsite consequence analyses: (e) Data used to estimate population and environmental receptors potentially affected."

The documentation of the worst case and alternative case scenarios did not include data used to estimate environmental receptors potentially affected as required by 40 C.F.R. § 68.39 (e). Through discussion with Mr. Anderson and Mr. Carlson, it appears that Occidental used the appropriate data to determine the environmental receptors, but that data was not maintained.

40 C.F.R. § 68.69 (c) Operating procedures

> "(c) The operating procedures shall be reviewed as often as necessary to assure that they reflect current operating practice, including changes that result from changes in process chemicals, technology, and equipment, and changes to stationary sources. The owner or operator shall certify annually that these operating procedures are current and accurate."

The LP VCM Process Risk Management Program unit of Occidental did not continue the annual certification of their operating procedures from approximately September 19, 2012, to April 2, 2014. I reviewed a MOC provided by Occidental which documented a change in the frequency of the thorough

review of operating procedures from annually to every three years. This MOC however, does state that the annual certifications were to continue.

Closing Conference

A closing conference was held on April 2, 2014, at 2:00PM. These areas of concern were mentioned and the process for this inspection report was discussed. At this time, Occidental provided signed certifications of all operating procedures from the LP VCM Process dated April 2, 2014.

Section IV – FOLLOW UP

Jeff Anderson was designated as the point of contact with the facility. He assisted with verifying the spelling of the names and titles that appear in this report.